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ERUDITIO

"A multidisciplinary forum focused on the social consequences and policy implications of all forms of knowledge on a global basis"

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In This Issue

ARTICLES

Eruditio Vision

The vision of the Journal complements and enhances the World Academy's focus on global perspectives in the generation of knowledge from all fields of legitimate inquiry. The Journal also mirrors the World Academy's specific focus and mandate which is to consider the social consequences and policy implications of knowledge in the broadest sense. The vision of the Journal encompasses major challenges facing global society and seeks to examine these issues from an interdisciplinary, multi-method and value guided perspective.

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In This Issue

This edition includes some of the most compelling articles that we have ever published. These articles are designed to inspire our imaginations, challenge our moral sensitivity and enlighten our scientific and intellectual consciousness.

Alexander Likhotal is a hard-nosed historian unafraid of drawing uncomfortable insights concerning the role of science and technology and the emergent forms of social organization. In this short essay titled "Science and Progress," among the important points he makes is that in the 21st Century science is as much about us as it is for us. He makes the important point that values are not a superfluous source but represent basic intangible assets of civilization. This is an excellent piece and worth reading.

Rajendra Pachauri, former chairman of Intergovernmental Panel of Climate Change, has contributed a remarkably lucid paper on some of the selected but important problems of global political economy and dangerous impacts of climate change. The central idea that is stressed in the paper, titled "Addressing Sustainable Development Goals and Tackling Climate Change: Scientific Realities and Options," is the problem of the lack of global transparency in financial institutions and in particular impacts on global tax fraud. He raises the issue of global core responsibility and in particular, the effects of the current system on income inequality and sustainable development. Suggestions are made to improve corporate law and to promote a deeper ethic on the part of the private sector to generate carbon neutral activity and to contribute positively to universal green energy production.

In his article titled "Complex Society and Values," **Jüri Engelbrecht** has given us a short but powerfully insightful introduction to complexity theory. He has brought important insights from the hard sciences and has explored the added dimension of complexity in the context of the social process. The most important insight here is the importance of values to guide inquiry into the complexity of social organization. This is a powerful insight well within the traditions of WAAS. A former president of WAAS, **Harold Lasswell** and a Fellow, **Myres Smith McDougal**, explored precisely the question of using the analogy drawn from the hard sciences of contextual mapping, guided by the clarification and identification of values as fundamentally important to the future of humanity and the prospect of its survival. Engelbrecht should be congratulated on this excellent and insightful article.

F. J. Radermacher, in his article "… and things are changing after all," has provided us with an important update concerning the consequences of 2008 economic meltdown. The most important of the consequences concerning the positive side is the enhancement of international fiscal transparency. The practical problem with a non-regulatory, free trade regime is that financial and corporate freedom way often is engaged in criminal activity. State regulation of multi state activity will in general be much weaker in the international environment. Recently free trade has been challenged and tax fraud now requires more transparency to ensure that the tax laws are respected. Radermacher draws attention to the need for corporate law reform and in this framework indicates new solutions to the problems of climate change. This is a very interesting and useful contribution to some of most challenging problems of the current global economy, and the environmental and other challenges.

Jakob von Uexkull has contributed a recent speech titled "History has knocked very loudly on our door. Will we answer?" delivered in Hamburg in March this year. Von Uexkull is the president and founder of the World Futures Council. The Council has been a powerful leader in drawing attention to some of the most important crises and threats to human survival. The message is unmistakable: there is no human future without a supreme collective global effort to save the planet and humanity. The Council has not been content to underscore the problem, it has deployed the powerful intellectual network within its orbit. One of the most powerful statements of this article is the following:

> *No religious dogma is as powerful and dangerous as the dogmas of economists who assume we will all become richer even in a burning planet.*

Understanding the evolution of leadership and individuality is the key to understanding the process of social evolution. **Winston Nagan** & **Megan Weeren**, in "The Mind of the Leader," perceptively capture the essence of the psychological profile of a leader. They discuss the importance of early childhood in shaping leadership skills and emphasize on effective decision-making as a key trait of leaders. – Comment by **Garry Jacobs**, Editorial Board Member, *Eruditio*.

Winston Nagan & **Megan Weeren**, in "The Future of Higher Education," identify the role and importance of thinking in learning. The authors derive a profound truth that shared enlightenment should be the purpose of education. Values is given prominence, and the role of individual and the culture of human rights is seen as central to the process of development. – Comment by **Garry Jacobs**, Editorial Board Member, *Eruditio*.

Carlos Alvarez-Pereira loudly proclaims that he is not an academic economist in his paper "Towards a society of living". This frees him from the restraints of a great deal of academic orthodoxy. It also permits him with a good deal of creative orientation to make some of the sharpest points of criticism about the failures of global economics, drawing attention inter alia to the "illusion of technology," "the endless stream of speculative bubbles," as well as "illusion of digital solutionism." The conventional economics is essentially a matter of gridlock thinking generated by gridlock culture, informed by gridlock purposes and gridlock visions. Pereira explores pathways out of blind spots that now envelop us. This is a refreshing and sparkling piece of scholarship.

Ivo Šlaus' "Concluding remarks" were delivered at the conference organized by Montenegro Academy of Art & Science. Šlaus has taken the major contributions of the conference and synthesized them in a brief and eminently readable compass. The paper touches on Higgs Boson, to dark energy, and to the emerging fields of synthetic biology, artificial intelligence and Nano-science. He draws attention to the emergence of smart robots to the quantum adiabatic computing and many other amazing and technological developments. He draws attention to the importance of science and technology for the development of a political economy based on human capital. A useful, erudite and fine summation of the conference agenda.

David Norris, in "Beyond Perspective," urges humanity to go beyond the limited perspective of the mind. He explores the nature of mind and explains how the problems we face today

have its roots in our limited perspective. A shift in consciousness is needed. We need to move from old paradigms to welcome the new world. Creative thinking is necessary to solve the problems and bring about a new paradigm. This is a very insightful article.

Charles Smith has taken on a conventional phenomenon of conversation and provided it with powerful and insightful insights in "Conversations that matter". Conversation involves such conventional methods as engaging, talking, creating and exploring deep matters in real time. Conversations reveal vibrational and static impacts. Truth emerges from conversations as well as emotional expressions. One of the great insights of this article is the recognition of conversation as a Kairos point. A Kairos point is an aspect of the present period. A Kairos point indicates elimination and in relationships it provides coherence. Smith provides many illustrations. Indeed, he provides 11 steps to maximize the Kairos portal. These 11 steps are a practical guide to optimising the new experience of communication. This is an important article and the reader could benefit from its insights.

"Human Mutuality System" by **Shlomo Yishai** is thoughtful and a very challenging short essay. It focuses on the changing individual human perspectives. It generates speculation on the role of space exploration and its impact on the human perspective. He focuses on the overview effect of pictures on the Earth from space which provides the view of the compression of Earth from space. This changes human identity on a global basis. We are still working through the effect of these effects on human identity, however, the view from space seems to expand the identity system of man. Space triggered a revolution in Earth space communication. Systems reality now competes with virtual reality and need for variety in reality systems now shapes human identity on a global basis. We require a new form of identity which generates a human mutuality system. Initially global warming requires the shift in humanity's fundamental perspective. Global warming and communications realities mandate a deep understanding of human consciousness. Indeed collective consensus requires a shift to collective individualism as well as the evolution of individual collectives. This is a very challenging article.

This book review provides a concise summary of **Petra Kuenkel's** *The Art of Leading Collective: Co-Creating a Sustainable Socially Just Future.* This book carries the endorsement of a leading economic thinker in the World Academy and the Club of Rome, **Ernst Ulrich von Weizsaecker**. The book underscores the contemporary development agenda which implies a new energy that is to guide a global partnership for a new people centered and planet sensitive agenda founded on the solidarity of all of humanity. The central target of this new initiative is the transformation that shifts toward universal human rights, universalizing of economic opportunity, with a view to the sustainability of these initiatives. Implicit in all of these is the necessity of providing jobs, inclusive economic growth, universalizing peace, good governance, and human well-being. As Petra Kuenkel implies, this requires a paradigm shift which is already underway. The central challenge she poses is the challenge of maximizing the decision making capability of humanity as a whole. Our models of leadership focus on the individual leader and the extension of individual skills. What is needed for the paradigm shift is collective leadership, collective innovation and a collective embrace of the necessity of a new paradigm. The challenge of collective leadership implies that we can isolate and understand the idea of a planet-wide collective consciousness. This is a powerful

and brave challenge. Kuenkel gives us a deep insight into the idea of a collective leadership compass. The review outlines this explicitly. What **Michael Marien** and **Michael Sales** underscore is the enormous growth of non-state social power and the vast aggregates whose full potentials for paradigm change lie at the heart of the evolution of a new global collective decision making capacity. This review is an extremely useful contribution.

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Science and Progress*

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Abstract

Science has become a part of almost every aspect of our life and takes justified credit for our progress. However, the fundamental myth of progress—that it produces a steady betterment of life—is crumbling before our eyes. The experience of the twentieth century, with its civil and world wars, Gulags and Holocaust, was too tragic to support a continued belief in a kind of granted optimism of world history. Unfortunately, science development is distorted by our modern social organisation and economic system. In this model science becomes an obedient servant of the system. Science allows us to do more, but it doesn't tell us whether doing more is right or wrong. Therefore, with scientific advance, we need greater ethical vision; better judgment; and stronger analysis of how to use knowledge for good, not evil. Science should not be accused for misuses of its advances. It is not science, but ignorance, that is to be blamed. Therefore education—new universal education—is critical, and not just for those who expect to practice science but for everyone who lives in the modern world and especially, political leaders. This will require a rapid transition to a different model of development, which not only takes into account the interests of short-term growth, but provides the opportunity for sustainable and inclusive development. Change may be frightening, but it is inevitable. And, in fact, it provides an opportunity to improve our instruments, our strategies, and… possibly ourselves. The wave of technological change is far from its peak. We should be excited and filled with hope—by where it could take us, of course, only if we chart the course properly.

Is it progress if a cannibal uses a fork?

– Stanislaw J. Lec

We live in a golden age of technological, medical, scientific and social progress. Just look at our gadgets! Twenty years ago, the internet was a geek thing. Now we can't imagine life without it. We are on the verge of medical breakthroughs that would have seemed like magic only half a century ago: cloned organs, stem-cell therapies to repair our very DNA. Even now, life expectancy in some rich countries is growing by five hours a day. A day! Surely if not immortality, then something very close to it, is just around the corner...

Science has become a part of almost every aspect of our lives and takes justified credit for the great strides of His Majesty the Progress. And yet somehow, this does not feed our enthusiasm.

* Based on the talk delivered by the author at a conference held in Podgorica on Technology + Society =(?)Future by the Montenegrin Academy of Sciences and Arts on May 19, 2016.

The fundamental myth of progress—that it produces a steady betterment of life—is crumbling before our eyes. The experience of the twentieth century, with its civil and world wars, Gulags and Holocaust, was too tragic to support a continued belief in a kind of granted optimism of world history. Today, Islamic State and the refugee drama, to say nothing about the growing list of existential threats from climate change to hybrid/proxy wars erupting in many parts of the world, do not add up to an optimistic picture.

As Stephen Hawking rightly argues, the human race faces one of its most dangerous centuries yet as progress in science and technology becomes an ever-greater threat to our existence. "We are not going to stop making progress, or reverse it, so we must recognize the dangers and control them," he warns.

Here, it seems pertinent to ask the paradoxical and provocative question: why during the last hundred years, has the idea of progress transmuted from the idea of almost a "salvation" into a dangerous factor, fraught with wars, almost ceaseless violence and existential threats to humanity?

I am not doubting scientific progress. But I do wonder about how science development has been distorted by our modern social organisation and economic system. I wonder whether real progress could have been much more impressive and tangible. I am thinking of the goals and definitions of progress.

"The idea of freedom as the foundation of progress was replaced by the idea of happiness—a fuzzy concept that could mean many different things to many people."

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1. What is Progress?

Different dictionaries state that progress is a forward or onward movement towards an objective or a goal. The concept was introduced by Enlightenment as a secularization of the Christian idea of the 8th day. Christianity believed that human development (understood as spiritual growth), routed in human ontological freedom, was the purpose of history. Most clearly this idea was expressed by Hegel: "The introduction and pervasion of the principle of freedom in secular relationships is a time-consuming process, which constitutes history". The goal of progress was well formulated in the 19th century by Russian thinker Chernyshevsky, who said that progress is the desire to "raise a man into human dignity", and "without freedom a man cannot be a man". Thus human being was considered not as a perfect and complete entity, but something that always remains in formation. Consequentially progress was understood as an endless human ascension on the road of self improvement.

The twentieth century, driven by neo-liberalism and post-modernist transition, has horrendously distorted the very notion of progress. The idea of freedom as the foundation of progress was replaced by the idea of happiness—a fuzzy concept that could mean many different things to many people. The United Nations even declared the International Day of Happiness (20 March) to recognise "the relevance of happiness and well-being as

universal goals." Predictably this idea has ultimately evolved into the hedonistic trend of seeking pleasant experiences and avoiding unpleasant experiences—building a sort of heaven on earth based on improvement not of a human being but his living standards. However, since scientific and technological development (which has always been inalienable part of progress) successfully continued, it seemed that progress was underway. It remained largely unnoticed that the idea of freedom, without which the very notion of progress becomes void, had been gradually abandoned.

"Science can only tell us what exists and not where we should head."

Recently UNESCO proudly reported: most countries, regardless of their level of income, now see science and innovation as key to fostering sustainable economic growth and furthering their development. But do you notice the double-meaning of that statement? In fact, there is a stark difference between science and innovation. While science implies investing money in research, innovation, though, is often simply the conversion of research into money...

Striving to fulfil the ever-growing appetites for joy and happiness, progress today is reduced largely to consumer-driven, often banal improvements in technology. Sure, our phones are great, but that's not the same as being able to send a man into the outer space, to fly across the Atlantic in eight hours or eliminating smallpox and other quantum leaps of the post-war Golden Quarter. As the US technologist Peter Thiel once put it, "We wanted flying cars, we got 140 characters" (on Twitter).

If it were not for distorted frameworks, we could be living in a world where cancer and Alzheimer were treatable, where clean power would end the threat of climate change, where the brilliance of genetics would be used to bring the benefits of cheap and healthy food to the bottom billion, and where poverty would have been a thing of the past.

It feels bitter to think in the year of the 55th anniversary of Yuri Gagarin's first space flight, that after a century of fateful scientific breakthroughs the twenty-first century—at least its beginning—turned out to be a tremendous setback when archaism and the darkest superstitions have been reborn into the modern world where 21st century technology helps spread images of barbaric decapitations in front of the cameras, and wars have become inalienable elements of "hybrid" peace.

And it is not about making science a scapegoat for misuses of its advances. It is not science, but ignorance, that is to be blamed for both—misusing and hampering it.

However, the XXI century has made one thing clear: the scientific endeavour is as much about us as it is for us.

We have to realize that science allows us to do more, but it doesn't tell us whether doing more is right or wrong. Science can only tell us what exists and not where we should head.

Goal setting is the function of values acquired in the course of history. This is why values are not a "superfluous resource" but basic intangible assets of civilization. Technically equipped, but morally flawed attempts to shape the future, risk turning into disastrous defeats that go beyond just restitution of the past (we see it already around us—rebirth of nationalism, the barbarisation of populations, demise and flagrant violations of international law, the dehumanising effects of pop culture).

Therefore, along with accelerating scientific advances, we need greater ethical vision; better judgment; and stronger analysis of how to use knowledge for good, not evil.

Of course, all this does not mean that we should reject rationalism. Simply there are other dimensions to humanity that must be respected along with rationalism. Many areas of life are simply too non-physical to be satisfactorily addressed by science. Love, hate, relationships, poetry, art, music, literature, and spirituality are all outside the realm of science. Any problems that arise in these areas cannot be resolved by science.

"Has anyone really looked for connections between culture, mathematics, and science? How about intuition and reason?"

To suppress and ignore these dimensions prevents even rationality from functioning properly. As Werner Heisenberg explained this in his philosophical work *The part and the whole*, "Science is made by man. This is a natural fact that is easily overlooked; another reminder of it can help reduce the regrettable gap between the two cultures—arts and humanities and science and technology". Both emotions and morality must work alongside rationalism as parts of the living totality that is human existence.

I am not promoting the merger of science and arts. Good art and good science necessarily require high degrees of specialization. After all, there will always be things that anyone understands, but cannot explain: for example, any idiot sees that the ball is not a bagel, but you have to be Poincaré to see the problem here, and Perelman to solve it.

However, was it a coincidence that Einstein, Heisenberg, Gödel—the three geniuses who have propelled modern science from determinist universality based concept of material world into the age of complexity, relativity and uncertainty—had excellent philosophical and/or musical education? Was it a coincidence that Leibniz was a writer and a philosopher while Gauss and Fermi were renowned philologists? Is it also a coincidence that over 75% of the Nobel laureates in science have had expansive knowledge in humanities and have been proficient in music or literature?

2. How many coincidences are needed to recognise the regularity?

Has anyone really looked for connections between culture, mathematics, and science? How about intuition and reason? It was 300 years before Einstein that Shakespeare intuitively guessed about relativity of time in his sonnet 77. 100 years later Bach's fugues provided a musical model of the modern concept of Universe. It took centuries until Einstein—who, by the way, used to say "I often think in music"—showed us how it all connects and turned the divine revelation into a scientific discovery.

Einstein directly warned about detrimental effects of science dehumanisation in 1946: "I think the root causes of a frightening world's ethical degradation are mechanization and dehumanization of our lives. This is a fatal side effect of the development of scientific and technical thinking. It is our fault! I do not see a way out from this plight. A man cools down faster than the planet on which he lives."

Therefore, the road to real progress, as Freud and Einstein agreed, must begin here with us, in our own attitudes. And a trip to Mars—a dream which, thanks to God, now seems to be reborn—will not make us any smarter or more tolerant and human. We need to do something with ourselves and understand something about ourselves...

I think this was exactly what Nikola Tesla meant when he argued: "The day science begins to study non-physical phenomena, it will make more progress in one decade than in all the previous centuries of its existence."

"Ultimately, we need a rapid transition to a different model of development, which not only takes into account the interests of short-term growth, but provides the opportunity for sustainable and inclusive development."

This will require a new type of universal education and not just for those who expect to practice science but for everyone who lives in the modern world. We need it because education is a catalyst for important, sustainable change in our society. We need it to help youth to chart the course. We cannot just train them to "succeed" in the current system—that is not real education. We must inculcate in them a broader world vision and a greater capacity for critical thinking. Political leaders, in particular, badly need to be exposed to scientific vision. The mind, once stretched by a new idea, never reverts to its original dimensions.

It is easy to dismiss the suggestion that science driven technology can save the day. After all, technological advance also requires good governance, market forces, effective universities, and more. Politics will still play its role.

Nevertheless, it's time to recognize that governments are ill-equipped to understand the scientific determinants, sophisticated technological challenges and opportunities facing the world, and that new instruments are needed to ensure that science and technology are adequately applied to address a wide range of increasingly urgent global problems and not just to make our smartphone batteries last longer (which personally I would not mind at all).

This new universal education should enable us to master the cultural riches accumulated by humanity. And only then high culture multiplied by the achievements of scientific thought, interacting, enriching and feeding one another, will guarantee the real human-centred progress.

Ultimately, we need a rapid transition to a different model of development, which not only takes into account the interests of short-term growth, but provides the opportunity for sustainable and inclusive development and returns meaning to the lives of individuals.

Change may be frightening, but it is inevitable. And, in fact, it provides an opportunity to improve our instruments, our strategies, and... ourselves. The wave of technological change is far from its peak. We should be excited and filled with hope—by where it could take us, of course, only if we chart our maps properly…

On Christmas day in 1989 conducting Beethoven's famous and mysterious Ninth Symphony, known as Ode to Joy to celebrate the fall of the Berlin Wall, Leonard Bernstein replaced "Freude" ("Joy") with "Freiheit" ("Freedom"), allegedly reverting to the original title of Schiller's poem that he had had to change to avoid censor's recriminations. I am still wondering, was it the great Maestro's brilliant situational improvisation to symbolize the Germans' jubilation of the retrieval of the divine gift of freedom? Or was it the prophetic Omen—"the writing on the wall"—reminding us that freedom is humanity's historic invariant, abandoning which will not be without consequences.

In any case I hope that the last century of great scientific discoveries will be followed again by the Age of Enlightenment—one that will illuminate the progress of Humanity.

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Addressing Sustainable Development Goals and Tackling Climate Change:
Scientific Realities and Options

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Abstract

The paper traces the history of the global dialogue on sustainable development including the outcome of the historic Rio Summit of 1992. It identifies climate change as a driver of and an important part of the unsustainable record of development pursued worldwide. There is now scientific evidence going back at least a century and quarter on the scientific basis of climate change, culminating in the work of the Intergovernmental Panel on Climate Change (IPCC) which brought out its latest comprehensive assessment in the form of the 5th Assessment Report completed in 2014.

The paper then brings out the equity dimensions of climate policy and how these need to address the challenge of sustainable development, particularly as they are embedded in the Sustainable Development Goals (SDGs) adopted by the UN General Assembly in 2015. The trends in emissions of greenhouse gases (GHGs) are alarming and the current concentrations of carbon dioxide, methane and nitrous oxide are unprecedented in at least the last 800,000 years. As a result, the impacts of climate change hold major risks to all forms of life.

Extreme events, including heat waves and extreme precipitation events are on the increase both in frequency and intensity. Projections for the future show that without adequate and timely mitigation measures, the risks from impacts of climate change would become progressively more serious and beyond the ability of human society to adapt to.

The paper lays out the critical policy imperatives of mitigation of GHG emissions and adaptation to the impacts of climate change, and including a process of sustainable development in growth strategy and policy.

The world has been through diverse trends, which have dominated policies and actions, before arriving today at the realization that economic development across the globe must be sustainable, a concept voiced by many, but understood by very few. On September 25, 2015 the UN General Assembly adopted 17 Sustainable Development Goals (SDGs), which essentially provide the building blocks of development strategies to be implemented globally in an effort to make economic development sustainable during the period extending up to 2030. The 17 SDGs were adopted as the culmination of an intensive and remarkably inclusive process followed actively since the 2012 Summit in Rio entitled "UN Conference on Sustainable Development". But, in actual fact the articulation of what would constitute sustainability in development goes back a long period of time including what is contained

in the report of the World Commission on Environment and Development (WCED), more popularly known as the "Brundtland Commission". The landmark Rio Summit of 1992 which was held with high expectations under the title "UN Conference on Environment and Development" also provided a turning point in thinking on issues of sustainability. While sustainability is a complex subject that goes considerably beyond protection of the environment, its genesis lies undoubtedly in concerns emanating from the degradation of the environment, which many distinguished thinkers and pioneering activists highlight as lying at the core of unsustainable development. However, acceptance of knowledge and scientific facts in this general field has been rather slow, and, therefore, even slower has been the practice of sustainability in development actions.

"Clearly, the contribution of these pioneering thinkers and visionary intellectuals provided the world with logic and evidence to show that the expanding production and consumption of some goods and services as being pursued by human society were clearly not sustainable, based on existing patterns."

If we look at the problem of human induced climate change, we can certainly identify the work of Svante Arrhenius, a Swedish scientist, who towards the end of the 19th century highlighted the risks that the world would face with growing emissions of carbon dioxide, as a consequence of industrial growth and the widespread use of coal as a source of energy in industrial enterprises and in steam locomotives for transportation which expanded rapidly in that period, followed by even greater expansion of road transport using hydrocarbons as a fuel. Arrhenius used the term 'Cosmic Physics' while assessing physical theories that linked scientific phenomena related to the seas, the atmosphere and land. He was perhaps the first scientist to have constructed a climate model in which the influence of atmospheric carbon dioxide on the earth's climate was assessed. His work was published in 'The Philosophical Magazine' in 1896, and it brought out on the basis of the model constructed by Arrhenius, that as the quantity of CO_2 increases or decreases in geometric progression, the temperature will increase or decrease in arithmetic progression. He was, therefore, able to find that the burning of fossil fuels which would lead to emissions of carbon dioxide would result in climate change. In his estimate, a doubling of CO_2 due to fossil fuel burning was expected to take 500 years, leading to a temperature increase of 3 to 4 ^{o}C. In actual fact, the world is on a trend by which doubling would take place in less than 200 years from the time that Arrhenius carried out his study and his modeling exercise.

Later in the 1960s pioneering environmental crusaders like Rachel Carson brought to the attention of society in the US the growing hazards from extensive use of a range of chemicals and pesticides, etc., which were polluting the soil, many water streams and the air in cities and industrial sites with the rapid growth of the US economy. This remarkable person faced formidable challenges and opposition from vested interests and industry leaders, who were solely concerned with maximizing profits without regard to consequences that society would face with growing use of harmful chemicals and other substances. For them the welfare of

human society, both for the present and future generations, was irrelevant—the very antithesis of sustainability as a goal or criterion in business.

This was followed by visionary economic thinkers like Nicholas Georgescu-Roegen and Kenneth Boulding who saw the reality of a closed economic system, wherein you could not wish away the growing volume and impacts of waste material being produced in the modern production system. Their major contribution, in very simple terms, was to show the world that producing waste material resulted in negative externalities, which were hardly ever considered by decision makers and were certainly not assessed and included in economic metrics for their negative economic and ecological impacts on the welfare of society. They also brought out the inevitable threat in the production of goods on an increasing scale which would lead to an equally large, if not larger, production of what was termed as "bads". Clearly, the contribution of these pioneering thinkers and visionary intellectuals provided the world with logic and evidence to show that the expanding production and consumption of some goods and services as being pursued by human society were clearly not sustainable, based on existing patterns.

The work of the Intergovernmental Panel on Climate Change (IPCC), which was established in 1988 and which brought out the latest of its comprehensive assessments, the Fifth Assessment Report (AR5), in 2014 has provided complete scientific assessment of the serious extent to which human actions are resulting in changes in the earth's climate. The IPCC, particularly in its AR5, has highlighted the growing risks associated with climate change, and how actions to deal with this challenge would also require sustainability in development strategies and their implementation.

Human induced climate change should be considered as symptomatic of the breakdown of sustainability criteria in development, as we see it worldwide today. Climate change is essentially the consequence of what constitutes unsustainability of growth and development, particularly because human-induced climate change is the result of growing concentration of greenhouse gases (GHG) in the atmosphere. And, climate change in all its forms is impacting adversely on all forms of development, sustainable or otherwise. At the same time, inaction on dealing with climate change would restrict the ability of society to develop in a sustainable manner. In its unmitigated extent climate change could lead to abrupt and irreversible impacts, which would leave no room for redressal of the problems that are being caused by today's path of development. Sustainable development also involves the principle of equity, and climate change has impacts which are largely inequitable both from the geographical as well as the social perspective.

Climate policies need to be assessed on the basis of sustainable development and equity. Limiting the effects of climate change is necessary to achieve sustainable development and equity including the eradication of poverty. If we evaluate the historical contribution of different societies to the accumulation of GHGs in the atmosphere, we see a vast range of diversity, because there are some societies which have hardly emitted anything more than a very small fraction of the total cumulative emissions of GHGs, but in several cases these are also societies which are most vulnerable to the impacts of climate change. Furthermore, it is a fact that different countries face varying challenges and circumstances and possess very different capacities to address mitigation and adaptation. These issues of mitigation

and adaptation raise questions related to equity, justice and fairness. There is also the issue of intergenerational equity which needs to be considered when evaluating a global response to climate change. Delaying mitigation shifts the burden from the present to the future generation. As it is, insufficient adaptation responses to impacts that are becoming commonplace are already eroding the basis and available space for sustainable development. In its very basic characteristics, climate change is a risk management problem, and an increase in risk to people, property, livelihoods and economic opportunities would render any pattern of development unsustainable. Mitigation and adaptation are complementary approaches for reducing risks of climate change impacts over different timescales. As the IPCC concludes, mitigation in the near-term and its continuation through the century can substantially reduce climate change impacts in the latter decades of the 21st century and beyond. Adaptation can provide substantial benefits both by addressing current risks as well as dealing with emerging risks that would occur in the future.

The IPCC AR5 has identified five Reasons For Concern, which aggregate climate change risks and illustrate the implications of warming and adaptation limits for people, economies and ecosystems across sectors and regions. It has been assessed that without additional mitigation efforts beyond those in place today, and even with adaptation, warming by the end of the 21st century will lead to high to very high risks of severe, widespread and irreversible impacts globally.

In order to evaluate the nexus between human induced climate change and unsustainable development, it would be useful to look at the historical assessment of climate change as it has occurred since the beginning of industrialization. The IPCC AR5 has found that human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history, and that recent climate changes have had widespread impacts on human and natural systems. Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850. It also found that the period from 1983 to 2012 was perhaps the warmest 30-year period of the last 1400 years in the Northern Hemisphere, where such assessment is possible. The globally averaged combined land and ocean surface temperature data, based on calculation by a linear trend, show a warming of 0.85 ^{o}C during the period 1880 to 2012. Further, it found that ocean warming dominates the increase in energy stored in the climate system, accounting for more than 90% of the energy accumulated between 1971 and 2010 and only 1% of this was stored in the atmosphere. Ocean warming was found to be largest near the surface, and the upper 75m warmed by 0.11 ^{o}C per decade over the period 1971 to 2010. Since the beginning of the industrial era, the uptake of CO_2 in the oceans has resulted in their acidification. In this period, the pH of ocean surface water has decreased by 0.1, corresponding to a 26% increase in acidity. In the period 1992 to 2011, the Greenland and Antarctic ice sheets have been losing mass, likely at a larger rate over the period 2002 to 2011. With glaciers continuing to shrink worldwide, Northern Hemisphere snow cover has continued to decrease in extent, and there is also growing evidence to show that Northern Hemisphere permafrost temperatures have increased in most regions since the early 1980s. The annual mean Arctic sea ice extent decreased over the period 1979 to 2012 with a rate that was very likely in the range of 3.5 to 4.1% per decade. Projections for the future indicate that in a scenario which involves no mitigation actions, Arctic sea ice during September in the middle of this century would be existent.

Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with other drivers for which human beings are responsible, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century. The AR5 clearly stated that it is extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by increase in human induced GHG concentrations and other anthropogenic forcings together. Overall, human induced forcings have likely made a substantial contribution to surface temperature increases since the mid-20th century over every continental region except Antarctica.

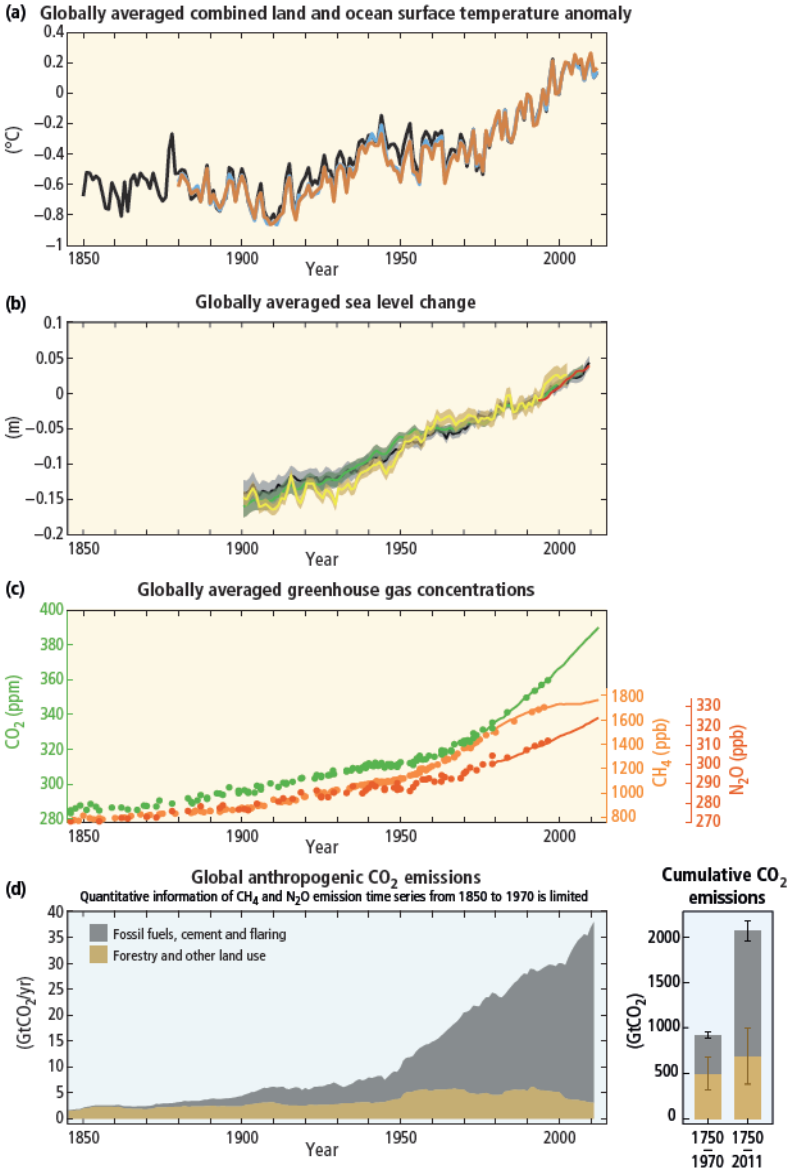
The extent of changes that have taken place since the beginning of industrialization, including changes in temperature, sea level, greenhouse concentrations and global anthropogenic CO_2 emissions are shown in Figure 1.

The impacts of climate change extend to natural as well as human systems on all continents and across the oceans. The AR5 states that the evidence is the strongest and most comprehensive in respect of impacts on natural systems. In many regions of the world changing precipitation or melting snow and ice are impacting on hydrological systems and affecting water resources in terms of both quantity and quality. These impacts exacerbate existing scarcity of water in several locations, which are the result of population growth, income increases and over-exploitation of groundwater resources as well as lakes and rivers. There are several terrestrial, freshwater and marine species which have shifted their geographic ranges, seasonal activities and migration patterns, etc. in response to ongoing climate change. Some impacts on human systems are also attributable to climate change. In the case of agriculture, several studies referred to in the AR5, covering a wide range of regions and crops show that negative impacts of climate change on crop yields have been more common than positive impacts. Ocean acidification and its impacts on marine organisms have also been attributed to human influence. As a result, food security for the world as a whole is likely to undergo adverse changes.

The IPCC brought out a report in 2011, entitled "Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX)", which found that the number of cold days and nights has decreased and that warm days and nights have increased on the global scale. It also found likely that the frequency of heat waves had increased in large parts of Europe, Asia and Australia. Further, it assessed that human influence had contributed to the observed global scale changes in the frequency and intensity of daily temperature extremes since the mid-20th century. Human influence had more than doubled the probability of occurrence of heat waves in some locations, and there was also evidence that observed warming had increased heat-related human mortality and decreased cold-related human mortality in some regions. Significantly, this report found that it was likely that more land regions had increased in the number of heavy precipitation events than those where it had decreased. Increasing trends in extreme precipitation and discharges in some catchments implies greater risks of flooding at a regional scale. Also, it is likely that extreme sea levels (for example, as experienced in storm surges) have increased since 1970, being mainly a result of rising mean sea level. The IPCC in its AR5 found that continued emissions

of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.

Figure 1: The extent of changes that took place since the beginning of industrialization



Source: IPCC AR5

The AR5 used four specific scenarios for projecting the future, and the one that represents no targeted mitigation can result in very high temperature increases, with an average temperature increase by the end of this century within a range of 2.6 °C to 4.8 °C. The scenario which includes stringent mitigation efforts is projected to lead to a temperature increase by the end of this century of 0.3 °C to 1.7 °C relative to the beginning of this century.

"Successful implementation relies on relevant tools, suitable governance structures and enhanced capacity to respond."

The AR5 assessed that a large fraction of species faces increased extinction risk due to climate change during and beyond the 21st century, especially as climate change interacts with other stressors. Most plant species cannot naturally shift their geographical ranges sufficiently fast to keep up with current and high projected rates of climate change in most landscapes. Marine organisms will face progressively lower oxygen levels and high rates and magnitudes of ocean acidification, with associated risks exacerbated by rising ocean temperature extremes. It is also projected that coral reefs and polar ecosystems would be highly vulnerable. At the same time, coastal systems and low-lying areas are at risk from sea level rise, which will continue for centuries even if the global mean temperature is stabilized. Global marine species redistribution and marine biodiversity reduction in sensitive regions will challenge the sustained provision of fisheries productivity and other ecosystems services. For wheat, rice and maize in tropical and temperate regions, climate change without adaptation is projected to negatively impact production for local temperature increases of 2 °C or more above late 20th century levels. However, some individual locations may benefit. Global temperature increases of around 4 °C or more above late 20th century levels will pose large risks to food security globally, particularly since demand for food is likely to increase with growth in population and income. At the same time, projections indicate a reduction in renewable surface water and groundwater resources in most dry subtropical regions. This would intensify competition for water among different sectors. Climate change is also projected to increase displacement of people. Populations that lack resources for planned migration would experience higher exposure to extreme weather events, particularly in developing countries with low income. In a world where conflicts between groups of people as well as between nations create various threats to human society, the AR5 assessed the impacts of climate change in this respect as well. Climate change can also indirectly increase risks of violent conflicts by amplifying well-documented drivers of these conflicts such as poverty and economic shocks.

The Paris Conference of the Parties which arrived at an agreement on climate change reaffirms the earlier target which had been set for 2 °C as being the limit of temperature increase that the world should treat as a goal till the end of this century. However, the Paris Agreement also requires the IPCC to produce a special report to assess the impacts of climate change at a temperature increase of 1.5 °C. This decision reflects the growing concern that 2 °C may be accompanied by impacts and climate change risks that would be unacceptable. Indeed, in the Fourth Assessment Report (AR4) of the IPCC it had been assessed that sea level rise by the end of this century resulting from thermal expansion of the oceans alone

could lie anywhere between 0.4 to 1.4m. The current debate at the global level also includes the subject of loss and damage, wherein several developing countries are highlighting the moral and possibly legal claims of the most vulnerable countries being compensated for loss and damage as a consequence of climate change by countries that are essentially responsible for the largest share of cumulative GHG emissions.

Mitigation actions would require consideration of a number of important actions and policies. The AR5 has clearly stated "Effective adaptation and mitigation responses will depend on policies and measures across multiple scales: international, regional, national and sub-national. Policies across all scales supporting technology development, diffusion and transfer, as well as finance for responses to climate change, can complement and enhance the effectiveness of policies that directly promote adaptation and mitigation". Since GHGs mix freely in the atmosphere, irrespective of their geographical sources of emission, international cooperation is critical for effective mitigation. Of course, mitigation can also have local co-benefits, such as improved air quality, higher energy security, higher agricultural yields and, in several cases, other economic benefits and higher employment. Adaptation measures on the other hand focus primarily on local to national level outcomes. The Kyoto Protocol provides useful experience in respect of the political aspects of international cooperation, the evolution of flexibility mechanisms such as the Clean Development Mechanism and the effectiveness of a global agreement with targets set for each country and monitoring of implementation measures.

The IPCC also found that mechanisms that set a carbon price, including cap and trade systems and carbon taxes, can achieve mitigation in a cost-effective way, but these have been implemented with varying effects, because national circumstances and variations in policy design are a critical determinant of outcomes. It has been found that the short-run effects of cap and trade systems have been limited because the caps specified were generally loose. In some countries, tax-based policies specifically aimed at reducing GHG emissions, along with policies focused on technology and other aspects have been instrumental in weakening the link between GHG emissions and GDP. In many countries, fuel taxes have also had effects which are similar to sectoral carbon taxes. Regulatory measures and information dissemination can also be effective. Appropriate regulatory approaches could include energy efficiency standards, information programmes including labelling of devices and equipment, which facilitate the consumers making better-informed decisions.

In general, sector-specific mitigation policies have been used to a greater extent than economy-wide policies. Economic instruments in the nature of subsidies are also sometimes applied across sectors and take the form of tax rebates or exemptions, grants, loans and credit lines. An increasing number and variety of renewable energy policies, which in several cases includes subsidies, have brought about rapid growth of RE technologies in several parts of the world in recent years. There are also in existence subsidies in sectors which contribute to GHG emissions, and reduction of these is also an important measure. There are varying estimates of existing subsidies on fossil fuels, and it is well-known that these remain very high at the global level, and in some countries are a determinant of high levels of consumption of fossil fuels.

As stated earlier, mitigation carries a large range of co-benefits which are linked with human health, food security, conservation of biodiversity, improvement of local

environmental quality, greater energy access, and generation of livelihoods and equitable sustainable development. Some mitigation policies could raise the prices of some energy services and could act as barrier in the ability of specific societies to expand access to modern energy services, particularly for under-served populations. These side effects can be offset through the adoption of complementary policies such as income tax rebates or other mechanisms for providing direct benefits to the consumer. Long term mitigation strategies would also involve the articulation of appropriate technology policy. Substantial reductions in emissions would require large changes in investment patterns, but with appropriate enabling policies and a facilitating environment, the private sector, along with the public sector, can play important roles in financing mitigation and adaptation. Climate change is a threat to sustainable development. However, the AR5 found that there are many opportunities to link mitigation, adaptation and the pursuit of other societal objectives through integrated responses. Successful implementation relies on relevant tools, suitable governance structures and enhanced capacity to respond.

"Change in behavior, lifestyles and values would have to be an important consideration in adopting and implementing policies for the future."

If we evaluate the nexus between climate change action and the 17 SDGs, there is clearly a substantial overlap in the actions required to meet the SDGs and those required to deal effectively with climate change. SDG 13 specifically mentions climate change actions, but many of the other SDGs are an important part and closely connected with climate action. For instance, the very first SDG, which targets the removal of poverty, would require both mitigation as well as adaptation measures by which the risks associated with the impacts of climate change, and which are disproportionately harmful for the poorest sections of society would require mitigation at the global level and adaptation to the impacts of climate change at the local level. The other SDGs, such as the 2nd, 3rd and the 6th, deal with the removal of hunger, good health, clean water and sanitation respectively, are areas in which the impacts of climate change would make the achievement of these SDGs far more difficult. For instance, given the growing adverse impacts of climate change on agriculture and with the prospects of the global population stabilizing above 9.5 billion and with higher incomes across the globe, food security would be affected adversely if climate action is inadequate or delayed. That would make it much more challenging for the world to meet all the SDGs. SDG 7 which focuses on renewable energy is an important part of mitigation action, as is SDG 9 which involves innovation and infrastructure. Some of the other SDGs which involve good jobs and economic growth, reducing inequality, sustainable and resilient cities and communities, responsive communication and partnerships for the goals are clearly linked very closely with actions to deal with climate change. The 14th SDG which focuses on life below water is also linked with climate change, because increased emissions of GHGs would lead to further acidification of the oceans and warming not only at higher levels of temperature but also at greater depth in the oceans. Hence, if the ecosystems and marine life existing in the oceans are to be protected and conserved, then the emissions of greenhouse gases and the consequent warming would need to be limited.

Action to deal with climate change and the attainment of the SDGs both have to be seen within the framework of ethics, intra-generational and inter-generational equity. Consequently, change in behavior, lifestyles and values would have to be an important consideration in adopting and implementing policies for the future. As the IPCC states climate change exacerbates other threats to social and natural systems, placing additional burdens particularly on the poor. Consequently, aligning climate policy with sustainable development requires attention to both adaptation and mitigation. On the other hand, delaying global mitigation actions may reduce options for climate-resilient pathways and adaptation in the future. Opportunities to take advantage of positive synergies between adaptation and mitigation may decrease with time, particularly if limits to adaptation are exceeded. Strategies and actions can be pursued now which would move towards climate-resilient pathways for sustainable development, while at the same time helping to improve livelihoods, social and economic well-being and effective environmental management. In some cases, economic diversification can be an important element of such strategies. The academic community has to come up with analysis of policies which are suitable and relevant at the local level, but which must now increasingly focus on the global imperatives of dealing with climate change and meeting the SDGs.

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Complex Society and Values*

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Abstract

Contemporary society is a highly complex system which involves many constituents starting from alliances and states to individual persons. Like in other complex systems (physics, biology, etc), the links between constituents and the corresponding interactions among them determine the behaviour of a system as a whole. In physical systems such interactions are determined by physical laws, in social systems, however, the properties of links and the characteristics of interactions are not so clearly determined. In this case one should interpret these characteristics not only by certain material quantities but also by values which determine the behaviour of the society. A short analysis of values in society is presented together with some examples.

1. Introduction

Complexity is an important notion not only in the natural sciences but also in social sciences. In a nutshell, complex systems are composed of a very large number of different constituents (elements) which interact with each other (mostly) nonlinearly. As a consequence, one cannot characterize a complex system by studying the behaviour of its constituents only because due to interactions the full system behaves in a manner which is not deduced simply by summing up the behaviours of its constituents. The contemporary studies of complexity started from ideas of Ludwig von Bertalanffy and Norbert Wiener in the mid-20th century in systems theory and cybernetics and then got active in a full swing in the second half of the 20th century in studies of chaos theory, self-organization, networks, multi-agent modelling, etc. The vast literature (see for example [1-8]) deals mostly with the natural sciences. One should stress some basic ideas emphasized in these studies:

> *One of the most highly developed skills in contemporary Western civilization is dissection: the split-up of problems into their smallest possible components. We are good at it. So good, we often forget to put the pieces back together again.*
>
> **– A. Toffler (1984)** [9]

> *Complexity science offers a way of going beyond the limits of reductionism, because it understands that much of the world is not machine-like and comprehensible through a cataloguing of its parts; but consists instead mostly*

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> *organic and holistic systems that are difficult to comprehend by traditional scientific analysis.*
>
> **– R. Lewin (1993)** [10]

With new terminology applied in different fields of knowledge, one should be careful because the notions could be understood differently. Take for example Humpty-Dumpty's attitude from Lewis Carroll ("Through the Looking Glass"). Alice asked him "whether you can make words mean so many different things?" The answer was, "the question is, which is to be master—that's all". Here we follow notions from the analysis of physical systems and leave aside notions like algorithmic complexity, computational complexity, etc. Given the lessons from the analysis of such systems, the further attention in this essay will be turned towards complex society. Indeed, contemporary society is a highly complex system which involves many constituents starting from alliances and states to individuals—all entangled into a whole. Without any doubt, the complex social systems are a part of a complex world as described in an excellent collection of essays "Philosophy of Complex Systems" [11]. A special analysis of social systems from the complexity viewpoint is given in [12]. However, as far as in physical, biological and other complex systems the interactions between the constituents can be described by quantitative links based on physical/physiological measures, in social systems the situation is much more complicated [13]. Yes, one can collect data from opinion polls, create databases of indices, characterize the structures (networks, etc) but as a matter of fact, the qualitative measures which are of special importance in societies are hard to be characterized. In very general terms, one can call these qualitative measures as values. In this essay the discussion will be centred on values in complex societies.

In Section 2 the main lessons from the analysis of physical systems are described. Section 3 deals with values from the general viewpoint and further, in Section 4, the problem of values in societies is discussed. Some examples which could cast more light on these discussions are presented in Section 5. Finally, Section 6 is devoted to some conclusions.

2. Complexity of Physical Systems

2.1 Phenomena

The signatures of complexity in physical systems are described in many monographs, see for example [6, 7]. Starting from simple nonlinear cases, many important phenomena characterize life in complex systems and much can be learned from them. It is even surprising that very simple nonlinear systems like the logistic equation or the three body system display rich dynamics that help in understanding more complicated cases. Even more, the simple sandpile dynamics [4] can open the door for understanding earthquakes, traffic jams and economy.

First, a few words about nonlinearity. In simple words it means that the rule of proportionality does not work and the links between inputs and outcomes are described by nonlinear rules. That means also that summing the influence of interactions is much more complicated than simple summing. Although known a long time ago,

> ***The whole is more than the sum of its parts.***
>
> **– Aristotle, *Metaphysics***

The full understanding of the importance of being nonlinear is the result of, let us say, the last half a century [14].

What follows is a brief survey of main effects which are important for understanding complexity.

(i) non-additivity and nonlinear interactions. This is the source of chaotic motions and typical of many physical systems modelled by mappings or differential equations. A typical example of a nonlinear interaction is the gravitational force between different masses. The three-body system (Sun, Earth, Moon) analyzed by H. Poincaré already more than a century ago has revealed ideas of possible instabilities. Another iconic example is the Lorenz attractor describing simplified atmospheric motion using the system of three nonlinear differential equations.

(ii) deterministic unpredictability. The behaviour of deterministic nonlinear systems may not be predicted and may lead to chaotic regimes of motion. A typical example is a simple logistic equation (mapping) derived for calculation of changes in the number of species. The weather is described by nonlinear Navier-Stokes equations that again do not permit the accurate forecasts for longer periods.

(iii) sensitivity to initial conditions. Small changes in initial conditions of a dynamical nonlinear process may lead to large changes in the resulting quantities in the course of time. This phenomenon within the framework of a nonlinear simple model was discovered by Lorenz although Maxwell had already hinted to such a possibility in the 19th century and Poincaré in the beginning of the 20th century. As far as the accuracy of physical quantities is limited in their value, there exists a so-called predictability horizon [15] because for example one simply cannot determine the temperature distributions needed for long-term weather forecasts with the accuracy of many digits after comma.

(iv) there are several typical phenomena characterizing the behaviour of nonlinear systems like bifurcations when the new solutions emerge after small changes of control parameters, emergence when new patterns arise, attractors where the solutions are attracted to a certain space of variables (phase space), multiple equilibria which are characterized by several (co-existing) attractors, thresholds which mark the borders between the various states, coherent states where effects are balanced, etc.

(v) despite the variety of chaotic motions there are several rules which govern the processes: period doubling and Feigenbaum numbers, power laws, self-similarity, fractality of attractors, etc., and also a number of methods which allow to analyse the processes: Melnikov method, renormalization method, determination of the Kolmogorov entropy and Lyapunov exponents for determining the scale of chaotic motions, etc.

Above is only a short list of phenomena and methods in the nonlinear world. For more information one should consult the "Encyclopaedia of Nonlinear Science" [16]. One should also stress the following. The usual understanding (common sense) is that nonlinear models are just a little bit corrected linear models. The world around us, however, is deeply nonlinear and the linear models, as a rule, are simplifications. Yes, in many cases simplifications work but essential effects are nonlinear. Next, the nonlinear physical problems are intensively

studied and the ideas and methods can be used also in other fields, at least in the metaphoric sense bearing in mind that models in other fields might be more complicated and the characters of interactions are not so well described like in physical systems.

"Networks are skeletons of the complex world."

2.2 Structures

Here we explain briefly the main structural cornerstones of complex world and processes—fractals and networks.

The word "fractal" was coined by Benoit B. Mandelbrot [17] using Latin "frāctus" (broken or fractured) for describing irregular non-differentiable structures. The famous Mandelbrot fractal is generated by a quadratic mapping in the complex plane and possesses a wonderful property—self-similarity. In simple words, under various degrees of amplification (zooming) each small part of this fractal replicates the structure of the whole. It means that such objects are scale-invariant and in addition are characterized by non-integer (fractional) dimensions. Fractal geometry [18] is based on the idea of using feedback procedures with simple repetitive rules for constructing very complicated structures. The iconic fractals named after Mandelbrot, Koch, Sierpinski, Cantor, Barnsley etc., display explicitly the properties of fractals. The fields of usage fractals for describing physical phenomena cover a wide area of nature and technology: from coastlines to crystals, from describing attractors in phase spaces to Brownian motion, from fractals in biology to structure of time-series of financial markets, from characteristics of seismic activity to music, from mountain ranges and structure of lightning to heart rate, etc.

The lesson to be remembered is that the repetitive usage of simple rules generates complicated objects which possess some universal rules.

Another important notion is networks. In simple words, a network is formed by a large set of elements (nodes) which are connected through a pattern of different interactions (links). The world is full of networks: the ecosystems form networks and webs of species, our computers are linked to Internet or connected to cloud computing, public transportation forms a network starting from local connections to intercontinental flights, economics and electric grids form a global network, social networks unite persons, etc. Again, there are several universal rules which help to understand life in global networks [8, 19]. A powerful tool for describing networks is the graph theory which started with the problem of crossing Königsberg's bridges. L. Euler showed in the 18th century that given the number of bridges it is impossible to walk over all the 7 bridges only once. Nowadays we know much more about the structure and behaviour of networks. Despite the large number of nodes and links, a small world phenomenon exists with only six degrees of separation. Networks are in general terms stable and large networks do not usually break under the failure of one node or link but in some cases domino effects and cascading failures occur. The cases of failure of electric grids are known as warning examples with large-scale effects. The power law governs the network structure but not as an ideal rule because in reality the power law might have fat tails. There are certain limits in networks, in social systems for example, the Dunbar number (which is estimated around 150) limits the number of possible active social relations. The Matthew effect (the rich get richer) seems to be important not only in economy but also in science where attention is given preferably to known names (to Nobelists, for example). Hierarchical

networks exist, possessing self-similarity and fractality. Summing up, networks are skeletons of the complex world [8].

3. Values

Values play an important role in psychology, ethics, religion, etc and field of studies into values is called axiology (Greek *axios*-worth and *logos*-theory)—see for example [20]. Human behaviours are strongly influenced by values. In general terms, the basic values accepted by society according to T.Ash [21] are: freedom, peace, justice, prosperity, diversity, and solidarity. His analysis is concerned mainly with Europe and he stresses that this skeleton of values must have flesh in order to be acceptable at all circumstances in our 24-hour, 7/365 non-stop global world. But the values are space-dependent and environment-dependent. It is no secret that the top athletes and top actors earn more than top scientists, reflecting so the attitude from the society. Values are related to culture but the personal values of people may not entirely coincide with the general norms in societies. And certainly, societies are different when we speak about values. Inglehart and Welzel have constructed a cultural map of the world [22], where survival values and self-expression values are depicted against traditional values and secular-rational values. This map shows clearly the groupings of English speaking countries and Latin America, catholic Europe, protestant Europe and Confucian countries, ex-communist countries and Africa. Another possibility [23] is to use GDP per capita as one of the scales. Depicted against happiness and overall life satisfaction, their results show that religion, tolerance and society's level of democracy play an important role in the happiness index. Religion and national pride were stronger factors in less developed countries than in developed ones. One should stress also that the level of satisfaction is more strongly influenced by economic conditions than the level of happiness. But their analysis takes also into account the temporal changes, for example the sense of free choice and subjective well-being shows clearly how the societies have changed in time. Such an analysis [23] leads to demonstrating the human development path: from economic development, democratization and social liberalization the increase in sense of freedom follows which is in a strong correlation with the increase in subjective well-being.

Recently, attention has been paid to happiness metrics which was proposed by the King of Bhutan in 1972 and later enlarged by many studies [24, 25]. The Gross National Happiness (GNH) index measures the societal well-being based on several subjective and objective measures including besides the GDP environmental wellness, social relation wellness, etc [24]. In some sense, it is a derivative of values because the factors of happiness include values as the key determinants of happiness (World Happiness Report, [26]).

4. Social Systems and Values

Society is a complex social system. It can be modelled by networks and clusters, communities and alliances and is spatially and temporarily differentiated. Society is able to function not only because of its structures but also the behaviour of its members (constituents in physical sense) and the links (interactions in physical sense) between them play the most important role. Turning to complexity of physical systems (Section 2), the interactions between the constituents are described by physical laws and can be measured at least with certain accuracy. In complex social systems the situation is much more complicated because

the links are based on accepted rules (laws), traditions, language, and governance, on economic and environmental conditions and certainly on values. This leads to an interesting question of how to combine our knowledge on complexity with "soft" qualities like values.

"Qualities (good/bad, pleasant/unpleasant, etc.,) cannot be measured and the estimations of qualities are based on observations, opinion polls and subjective judgements."

The problem is certainly old. For example, Plato believed in an objective measure of values in order to keep the system (i.e. society) in a state of harmony (see [27]). Actually his idea was related to maintaining a system with political power. In the contemporary world the situation is much more complicated. Qualities (good/bad, pleasant/unpleasant, etc.,) cannot be measured and the estimations of qualities are based on observations, opinion polls and subjective judgements. Here a well-known experience from the history of science may be recalled. The Ptolemaic model of the Earth-centred solar system was based on observations. In order to explain the motions of planets, Ptolemy used combinations of epicycles which moved on a larger circle (deferent) and placed Earth out of centre of the deferent for describing the apparent speeding up and slowing down of planets. This theory proposed about 2000 years ago was used for about 13 centuries and only in the 16th century Copernicus proposed the Sun-centred system. His ideas were elaborated by Tycho Brahe, Kepler and Galileo but the explanation was finally given by Newton. The Newton's gravity law explained the reason why planets move in such a way. By the way, the gravity law is nonlinear. So the observations were not enough, one should find the reasons.

The large cornucopia of knowledge in physical sciences can support the modelling of social systems including descriptions of phenomena and structures (Section 2). For example, the notion of hierarchical structures is useful in the social sciences but the archaeologists have added heterarchy as another important notion [28] following ideas from neural nets [29]. When hierarchies have elements which can be ranked and ordered then heterarchies have elements which are unranked or have the potential to be ranked in a different way.

When considering the effects and behaviours in social systems, the main problem is whether the observations are good enough to give the full picture of social processes or something is hidden. And another problem follows: knowing the gravity law one can predict the motion of planets but what is the predictive power of observations? And what can be overtaken from studies of complexity in other fields into modelling and understanding social systems? And what is the role of values for interactions in society?

The first important question to start with is: what are values? The next question is whether values are fixed or are changing. It must be stressed that Inglehart et al. [23] have shown by analysing the changes in certain values in society over 1981-2007 that these values are indeed changing in time. The subjective well-being (SWB) index demonstrates many changes due to changing environment. One should also understand what universals in the content and structure of values are and what priorities in values are [30]. Based on those

notions, other studies have also indicated how values are different in various cultures [31]. However, the values have inertia clearly. A detailed analysis on value system in Estonia [32] has shown that the Soviet occupation of Baltic Countries before and after WWII could not change all the inherited values. Said the authors: "in spite of the Soviet dominance of officially visible societal culture, the older Estonian generations seem to have been able to transfer a basically West-European value structure to their children and grandchildren."

"In one of the recent dictionaries the entry "beauty" has a very laconic explanation—see "cosmetics"!"

Another example on changes illustrates the erosion of values. Once I wrote an essay on the beauty of science (Engelbrecht, [33]) bearing in mind the beauty of nonlinear dynamics. It is well known that Paul Dirac and Pierre Duhem admired the beauty of physics. Writing the essay, I checked many encyclopaedias and dictionaries on the definition of beauty, starting from the celebrated Encyclopaedia Britannica from 1769. I collected many definitions such as beauty "is pleasing to the sense and intellect" and "is the combination of all the qualities of a person or thing that delight the senses and please the mind". However, in one of the recent dictionaries the entry "beauty" has a very laconic explanation—see "cosmetics"! No comments are needed.

In order to manage organizational complexity, the notion of values has been introduced as attractors of chaos [34]. It is argued that neither rigid objectives nor instructions are effective but a shared set of values should be accepted by members of an organization. These values can be divided into ethical (honesty, integrity, sincerity, loyalty, etc) and competence (creativity, flexibility, order, intelligence, etc) values and the final state of an organization is then described as an attractor in a self-organized system.

Based on the conversation between Alice and Humpty-Dumpty (Section 1) let us remind ourselves how the concept of truth is understood by different scientists and scholars [35]. The concept of truth is related to notions: correct, valid, coherent and right. According to [35], natural scientists trust only the first two, social scientists the first and third, humanists the third and fourth. It seems that the starting question is to find the common language which may divide natural scientists and humanists like Snow showed in 1959 in his famous lecture "The Two Cultures" [36]. Kagan [35] added social scientists in his "The Three Cultures" to this pair and showed how the scientists and scholars of different fields use different wording and methods. Complexity might be a unifying area of knowledge where all three might find a common language.

The interest in complexity in social systems is growing. An overview by Byrne [12] is an excellent introduction to social systems from the viewpoint of complexity but one cannot find "value" in its index. In the large overview on complexity [11] describing many fields of knowledge is only one short subsection on values concerning the role of values in public policy resolution of complex dynamics.

5. Examples

Some examples of how the knowledge from physical complex systems has improved understanding of social systems follow.

First, let us mention that the methods derived for the analysis of physical processes can also be effectively applied for the analysis of time-series in social processes. For example, the multi-scaling of low-variability periods and multi-affinity of time-series can be used for the analysis of financial time-series [37]. Further, the same authors have introduced "good" and "bad" notions for the analysis of portfolio optimization [38] attributing these notions to fluctuations of portfolio distributions. Actually these studies belong to the fast growing field of research called econophysics (cf. [39]). A textbook describing macro-economical processes like business cycles, interregional trade, monopolies and oligopolies etc., using the language and methods of nonlinear dynamics is masterfully written by Puu [40].

One could also use network analysis for country-country and product-product links in order to estimate the structure of the world economy [41]. This analysis has estimated unexpected socio-geographic links which can be characterized as nonlinear interactions between the diversification of a country and the ubiquity of its products.

There are not so many examples where values are introduced into the analysis. One example is related to using the GDP which is usually taken only at its face value for determining the effectiveness of countries. A new metric introduced for estimating the countries' fitness could give much more information [42]. The idea is to assess the non-monetary competitive advantage of diversification using nonlinear maps and taking into account the country fitness and product complexity. The fitness actually measures the level of the competitiveness of a country and is proportional to the sum of the products exported weighed by their complexity. Such an approach is able to understand the hidden potential of a country for development, i.e. to predict the growth. Typically, the power laws characterize the fitness [42]. The analysis has revealed the strongly heterogeneous patterns of evolution [43]. In the fitness-income plane the laminar and chaotic zones are estimated. For chaotic zones where the predictability is low, a data-driven method has proposed to assess the future developments of countries. In these studies, fitness could be linked to values.

Information and communication technology (ICT) is a trademark of the contemporary society. The World Wide Web with its nodes and links is an excellent example of a complex system. The use of the ICT has an essential impact on economy and social system but raises also ethical problems, i.e. value problems. The EU Future Emerging Technologies (FET) Flagship pilot project "FuturICT" had as one of its goals Value Sensitive Design (VSD). The basic idea of the VSD is making social and moral values central to the development of ICT [44] stressing that it is a primary goal and not a by-product. In general terms, the VSD aims at making values part of technological design, which means embedding technology into the complex society needs ethics taken into account. The "FuturICT" paid a lot of attention to a code of conduct of scientists developing the ICT: to promote human well-being, reduce vulnerability of the society, promote fairness, increase social capital and the happiness of people, protect privacy, etc [44].

6. Final Remarks

Society is, without any doubt, a complex system and the idea to use the knowledge from the analysis of physical complex systems in the analysis of societal problems is tempting. Indeed, the notions of nonlinearity, interactions, self-organization, stability and

chaos, unpredictability, sensitivity to initial conditions, etc are phenomena which could also characterize social systems. However, not everything is easy because:

> *"...physical and computational measures of complexity exist in abundance. These can provide a starting point for creating social complexity metrics, but they need refinement for the simple reason that electrons don't think".*
>
> *"To harness complexity,..., we must take a generative perspective and see social outcomes as produced by purposive authors responding to incentives, information, cultural norms, and psychological predispositions."*
>
> **– S.E Page (2010)** [45]

As shown above, one of the preconditions is to speak in the common language. It is not the problem of cultures only [31], it is also a problem of scientific communities [35]. Another important problem is causality because the observations cannot always reveal the reasons. Forcing societies to fit in a box without understanding the reasons may lead to serious consequences like we witness in many world affairs. Interdisciplinarity is really a way the society together with scientists and scholars must move on to. There are surprising similarities in many fields of human activities and much can be learned from these [46]. Metaphors encompass often our everyday communication and can also be used in explaining the behaviour of complex social systems. Such an approach is advocated by Wheatley [47] for management and leadership. She does not enter into the technical details of chaos theory and complexity in terms of physical systems but recommends using these ideas convincingly to management of social systems and also for educational purposes.

Many phenomena in the physical world can be measured and counted. Even in social systems the counting has taken enormous pace, to be it citations of research papers or indices of productivity. However:

> *"Not everything that can be counted counts, and not everything that counts can be counted."*
>
> **– W.B. Cameron (1963)** [48]

This saying is sometimes attributed to A. Einstein but actually it belongs to a sociologist, not to a physicist. Now the important question comes: what shall we do with that which cannot be counted but is important? In physical complex systems constraints are used in order to limit or guide the process, in social systems it seems that values are leading and guiding factors. Common sense says that constraints may have slightly negative meaning but actually they describe certain limits of processes. On the other hand, values generally have positive meaning but value systems in different communities may also be different and that may cause problems like we witness not only in Europe but worldwide. An interesting idea based on using metaphors is to determine values as attractors [4]. This means that the behaviour in a system may be attracted (trapped) in a certain space domain and not in another. However, following this idea, we might think about the co-existing attractors. In this case an external influence will move the motion, i.e. the behaviour to another space domain. Here is much to be discussed and analysed.

Besides values, the structures of systems and their interactions are also important but social systems need something more. That is why we must think very carefully how to embed values into the analysis and explanations of processes. This is where physical scientists and social scientists could meet and learn from each other [50].

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Things are changing after all

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Abstract

The global situation is getting more difficult every year. While states fortunately agreed on the SDGs and on a climate contract in New York and Paris at the end of 2015, the situation is deteriorating with a fast growing world population and increased environmental pressures. Is there still a chance for a sustainable future or will we end up in a world two-class society or an ecological disaster? At first sight, sustainability might seem a hopeless task, but there is still a chance. Because, following the world financial crisis, the coordination between states has increased considerably. This concerns the overall idea of green and inclusive economies, replacing free market and market fundamentalistic paradigms, even on the OECD level. Encouraging is a concentration on aspects of balance concerning income, and even more attacks on aggressive tax avoidance schemes and tax havens. Details are given in the paper.

> *"Until the global financial crisis, the standard attitude was the market-fundamentalist propaganda that the financial market was the "brain" of the world economy and that only it was capable of the optimal allocation of scarce resources."*

1. Initial Situation

In the context of globalization and in the face of many international problems the world is not in an easy situation. With regard to global governance, in particular, progress is not as fast as we might want it to be. However, some progress has been made. Ten years ago, for example, the issue of adequate taxation of cross-border economic activities was an ongoing problem which seemed to be intractable. Not even in the EU was it possible to create change for the better, among other things because of the attitude of Luxembourg and Austria. Both normally used Switzerland and Liechtenstein as their excuse, on the grounds that for reasons of competition there was nothing they could do until these countries made some changes. In their turn Switzerland and Liechtenstein always argued that they were not prepared to do anything until the EU had clarified its internal problems with Luxembourg and Austria.

Until the global financial crisis, the standard attitude was the market-fundamentalist propaganda that the financial market was the "brain" of the world economy and that only

it was capable of the optimal allocation of scarce resources. Governments and politicians were not to interfere in this. Any kind of strict regulation and taxation of these processes would burden the intelligence of the "global financial brain", and the free market was the solution to all problems. The IMF and the World Bank argued along the same lines. With the Washington Consensus aid to poorer countries was made conditional on them pursuing a neo-liberal course. These recipes have turned out to be disastrous in some respects. As soon as the financial crisis broke out, the rich countries, headed by the USA, took the very actions which had previously been prohibited to developing countries.

The crisis was a severe burden on many countries and put the Eurozone under extreme pressure. The crisis is not over yet, but it is remarkable how the discussion has changed during this period. This is especially true with regard to the question of tax haven and tax compliance, as well as to "harmful" competition between countries in the form of very low taxation of cross-border activities. The availability of CDs with incriminating data on systematic tax fraud has come to play a decisive role in this process, too.

Major changes have now taken place in relation to themes which we, not only in the Club of Rome, the Global Marshall Plan Initiative and the Senate of Economy, have always promoted as representatives of a global eco-social market economy. We have turned out to be right, and we should remember this with regard to other topics for the future, too.

2. The pressure on tax havens has grown enormously

What has happened? The pressure on tax havens has grown enormously. The critical attitude in the US and in Europe towards this topic has intensified significantly. Not least because, for one reason, so-called 'tax-CDs' smuggled out of the country have made it clear that members of the 'elite' and top leaders in all countries have for years and decades systematically committed tax fraud on an incredibly large scale. This was not the result of carelessness, but precisely planned and implemented with great consistency.

3. Automatic Data Exchange

As a result Switzerland has now revised its 'business model'. As before, private investors are in part still able to avoid the consequences of this change of policy by entrusting their money to professional financial management companies, but with respect to assets in private bank accounts the situation is now very different. We are moving in the direction of automatic data exchange between the banks and financial authorities of individual states, and Switzerland is participating in this process. If it was unable to inform the persons involved about upcoming legal requirements in any other way the country recently even placed sensitive information about account data on the Internet. At an earlier stage account holders had been called on to either reveal their accounts to the finance authorities in their country of residence, or authorize the Swiss bank to do this itself. If this was not implemented, accounts were closed. In the OECD there has been significant progress towards an agreement on automatic exchange of data, and 50 states have already committed to this.

4. Austria abolishes confidentiality in banking

Austria, too, has now done away with its controversial banking confidentiality. The coalition government consisting of the Social Democratic Party of Austria (SPÖ) and the

Austrian People's Party (ÖVP) achieved the two-thirds majority required in the Austrian Parliament with the votes of the opposition Greens.

By abolishing banking confidentiality, the Austrian government expects additional income from the taxation of capital gains of around 700 million euros per year via greater control options. A central register is to be introduced for this, in which all of the approx. 20 million accounts in financial institutions in Austria are recorded.

"We do not want banking confidentiality to be abused any longer," was the reasoning for the reform. Tax fraud is theft from society. The requirements for account access are reasonable suspicion and the approval of a judge in the Austrian Federal Finance Court.

Part of the comprehensive reform is an increase in the top tax rate from 50 to 55 per cent for income of one million euros and above. The tax on capital gains will increase to 27.5 per cent, while it stays at 25 per cent for interest on savings accounts (see Handelsblatt, July 8, 2015 no. 128, p 9).

5. Taxation of cross-border economic activity

A second major issue is cross-border economic activity. In particular this is aimed at aggressive tax planning by companies such as Google, Amazon and Facebook, which essentially do not pay any taxes at all. Their approach takes advantage of competition between countries, the lack of transparency in the case of internal transfers within companies, and the possibility of involving intermediaries as well as the multiple transformation of legal conditions (so-called "wrapping"). The OECD is working on all these issues, together with the G20. Together both organizations are investigating the whole complex of cross-border activities and their taxation. Tangible progress is expected in this field.

6. Calling free-trade into question

In the context of the discussions on the planned trans-Atlantic free trade agreement (TTIP) it is interesting that it is now being pointed out (Handelsblatt 06.18.2015) that as early as 2004 Paul Samuelson, the late doyen of market-based economics in the United States and Nobel laureate in economics, shocked the representatives of doctrinal purity with the statement that "Free trade could cause lasting economic damage". Recently former US Treasury Secretary Larry Summers wrote: "The era of free trade agreements in the classic sense is over. Further agreements can no longer simply be justified by the knee-jerk assumption that free trade is always a good thing." In fact, the general preferability claimed for free trade with reference to Ricardo has never been universally applicable, and specific conditions are required for it to succeed. Ricardo himself was aware of this. However, the "free-trade fanatics" tended to ignore or conceal this aspect of the doctrine.

7. More transparency with regard to property in Switzerland

Piketty[1] and his student Zucman[2] address high transparency in the area of property as one of the reasons that taxation is not possible or cannot be implemented in some cases. Several thousand billion dollars have also been missing in international capital export budgets for many years. This is part of that lack of transparency. While half the world's assets are buildings and property is largely transparent in land registry registers there, this is not true for

other types of ownership, such as shares or assets in certain foundations or trust organisations. These are all entry points for a lack of transparency with many negative consequences for enforcing what is necessary legally or warranted in itself. Piketty and Zucman argue at this point that property should in principle be registered in registers, to which public authorities have access when required. Otherwise, no legal protection for the property should be granted. The orientation of ownership on the common good and the assumption of responsibility on the part of owners should thus be fully enforced.

The following is now noteworthy*: Switzerland has recently further tightened its transparency regulations for combating money laundering on the recommendation of the Financial Action Task Force (FATF; a working group in the OECD anti-money laundering) and in response to international pressure. The change in the law for private limited companies with bearer shares, and slightly reduced for all other private limited companies and limited liability companies, is included. The new developments already came into force on July 1, 2015 with partially applicable transitional periods of 6 months. This means urgent action for all private (or non-listed) companies in order to create the necessary structures in time.

8. Why are bearer shares problematic?

While companies keep what is called a shareholders register for registered shares, in which shareholders must register in the company with each purchase of shares and do not become shareholders until it is entered in the shareholders register, there are no comparable structures for bearer shares. Because all shareholders' rights are contained in an anonymous sheet of paper and the shareholders can pass on this paper as they like, the company does not know the holders of bearer shares.

9. What new obligations apply to bearer shares?

Bearer shares will effectively be treated as registered shares in the future. What is new is that companies must also keep registers for all their bearer shares.

10. What other obligations apply to all AGs and GmbHs?

In the future, all types of shares including ordinary shares of GmbHs will be obligated to ascertain and document the economic beneficiary for holdings of 25% and more. The economic beneficiaries are the natural persons (one or more), who are behind all holdings, interim companies, trust structures, etc. and are the actual beneficial owners of the assets.

11. Harmonization of corporate taxation in the EU

Amazingly there has been movement within Europe on another subject. Whereas so far the focus has been on the harmonization of the basis for corporate taxation in EU discussions on the topic (which, however, did not lead to any progress over the years), the much debated findings about the massive tax concessions made by Luxembourg in particular towards very large companies have meant that the subject of minimum levels of taxation in the corporate sector is now also on the table within the EU. That the BDI in Germany opposes this is difficult to understand. For every ordoliberal there should be a self-evident objective of

* artax NEWSLETTER of 30/06/2015

ensuring fairness in a common market by comparable or agreed upon levels of taxation of all companies and of preventing "freeriding" of some companies at the expense of others. This is true so much the more, as particularly small and medium-sized companies are those that are usually disadvantaged.

12. Explicit addressing of the balance of income distribution

Another key issue in the work of the Research Institute for Application-oriented Knowledge Processing (FAW/n in Ulm), the Club of Rome and others which has been raised in books and dissertations, is the question of social balance, the so-called 'efficient inequality range'—in other words the shaping of social differentiation within societies to ensure a positive effect.† Accordingly it is a matter of achieving the golden mean between too much and too little balance. In the wake of the financial crisis, large international organizations such as the IMF and OECD have changed their economic position considerably. They are now arguing in favour of green and inclusive economies, instead of essentially unregulated market structures. This corresponds to the Senate's position of an ecosocial market economy, an ecologically and socially regulated market economy. With its Better Life Index the OECD has also formulated an interesting list of criteria for sustainability, which includes an explicit parameter for the distribution of income. German political thinking has not yet reached this stage. The topic has currently gained importance due to the reflection of the important book by Piketty (*Capital in the Twenty-First Century*), as well as in continuation of relevant considerations by economic Nobel laureate Joseph Stiglitz in his book on the topic "The Price of Inequality". The problem of increasingly input-free appropriation of ever larger parts of the annual economic output by a small group of very large asset holders and their heirs requires reforms and change, if a "productive" balance of income distribution is the goal.

"The question of income and wealth distribution is today an explicit policy issue within the OECD."

The contention of the OECD corresponds to the position which the Senate has always held that the 80% with lower income levels should enjoy at least half of total income, and the 20% with higher income levels should have access at most to 50% of total income. As described, the question of distribution is today an explicit policy issue within the OECD. Unfortunately this is not yet the case in Germany and Europe as a whole. That needs to change. The Senate has always argued in this direction, and is now doing so increasingly with regard to potential massive future job losses in high skills areas resulting from the increasing technical intelligence of IT systems, from analytics, Industry 4.0 and the use of big data.

In cooperation with Denkwerk Zukunft, which shares our position on the issue we, as the Senate of the Economy, held an interesting conference on the issue of income distribution as long ago as 2012 in Hamburg. The subject of the conference was that a balancing parameter

† compare with: Atkinson, A.B.: Inequality: What Can Be Done?, Harvard University Press, 2015

Herlyn, E.: Einkommensverteilungsbasierte Präferenz- und Koalitionsanalysen auf der Basis selbst-ähnlicher Equity_Lorenzkurven—Ein Beitrag zur Quantifizierung sozialer Nachhaltigkeit, Springer Gabler Verlag, 2012

Piketty, Th.: Capital in the 21st Century, C. H. Beck Verlag, 2014

Radermacher, F.J., Beyers, B.: Welt mit Zukunft—Die Ökosoziale Perspektive, Murmann Verlag, Hamburg 2011

Stiglitz, J.E.: Price of Inequality: How Today's Divided Society Endangers Our Future, Norton & Company 2012

was missing in the 'magical quartet' of Germany's 1967 Stability Act, which addresses the four points of (1) price stability, (2) high employment, (3) balanced external trade and (4) adequate and steady economic growth. In the 'affluence quintet' of Denkwerk Zukunft the balance of income distribution is one of the 5 parameters taken into account when looking for sustainability-oriented policies.

"This pledge-based approach, which is based on voluntary, not directly coordinated and not conditionally related commitments by the participating states, will only solve half of the climate problem. However, it may solve the question of justice between nations."

In a recent study entitled "*Why Less Inequality Benefits All"* the OECD has now once more pointed out that countries lose a lot of wealth when inequality becomes too great. This unambiguous statement is a very big step forward towards a "green and inclusive economy" philosophy. In Germany, too, at least one important step forward has been taken: the introduction of the minimum wage.

13. Towards better Corporate Law

In today's economic system, the dominance of ownership interests towards returns on assets and capital undermine the obligation of property, within the context of the **common good** to at least pursue the objective of sustainable development equally. In particular, success in the market can be "sold" as a valuable contribution, even when it is ultimately based on burdening the common goods, that is, of global commons. This is a form of externalisation of costs of companies at the expense of the general public. In today's competition law, set competitors cannot sue under competitive pressure of **unfair competition** but are put under pressure on the market, in the sense of a Prisoner's Dilemma, to do the same as their competitors. The "plundering" of the commons is becoming commonplace, as can easily be observed in the climate issue, today.

To this end, there are now new scientific activities underway, intended to modify corporate and competition law, which is addressed very comprehensively in documentation from the Friedrich Ebert Foundation, "Anchoring sustainability in competition".‡ This goes back to the concrete formulation of the required new laws by experts from the legal sector with relevant specialisation. In particular, companies should be able to sue competitors for unfair competition if they achieve their performance in the market under false pretences, namely (only) at the expense of the burden of common goods. If their suit is successful, then the "free riders" are levied with the appropriate costs and obligations as a condition of being allowed to keep their licence to operate. In the long-term, this may be an important contribution in a world in which entrepreneurship and sustainability are better connected than today.

‡ Friedrich-Ebert-Stiftung (ed.): Anchoring sustainability in competition. Expertise on behalf of the Department for Economic and Social Policy of the Friedrich Ebert Foundation (Authors: Johannes Hoffmann, Gerhard Hofmann, Jens Lowitzsch, Christian Pitschas, Denis Suarsana and Herwig Roggemann), Bonn, June 2015

14. New Approaches to solving the Climate Problem

Interestingly, progress is also being made with respect to the climate. For too long an attempt has been made to translate an abstract idea of justice into a global compromise. This could never succeed, in view of the very different initial situations in which countries find themselves, combined with equally different notions of justice. The debate so far has only reflected the problems of justice between developed and less developed nations. In the process there has been no mention of the achievements and inventions of the developed nations—for example penicillin or the automobile—which have benefited the less developed nations. What was also lacking was the second dimension of justice, which consists of the fact that countries such as India and Brazil now contain many rich people, while there are also a lot of poor people in OECD countries. Even more significant: unemployed people in Germany cannot be expected at their own expense to solve the climate problems of Indian millionaires. As a result two dimensions of justice need to be addressed simultaneously.

15. Voluntary Carbon Neutrality on the part of the private sector

The logic of development has meant that today, since Copenhagen, a pledge-based approach is being pursued, and hopefully this will result in a new global climate treaty in Paris. This pledge-based approach, which is voluntary, not directly coordinated and not conditionally related commitments by the participating states, will only solve half of the climate problem. However, it may solve the question of justice between nations. At the same time it opens up a large window for private climate-neutrality action on the part of organizations, businesses and private individuals, which can be financed by wealthy protagonists in particular.[3] This applies to drawing legal emission certificates out of the market as well as to afforestation and humus formation in agriculture in order to absorb CO_2 from the atmosphere (negative emissions). Such measures contribute, in particular, towards the second dimension of justice to be observed.

16. Financing the Green Climate Fund

Potentially they involve indirect co-financing of the green climate fund by the rich countries to the benefit of the less developed countries. After the preliminary agreements this fund will provide at least $100 billion a year, which the rich countries are to contribute annually from 2020 in order to support climate protection measures in poorer countries and finance measures required for adaptation to climate change. If we consider that the total budget for development cooperation (ODA) is currently (only) 135 billion dollars per year, this is an important new element in cross-financing from the fully developed countries to the remaining states. In addition, such carbon neutrality measures mean the co-financing of humus formation and in particular of afforestation in tropical countries.

This is a wealth and development programme for these countries which also promotes the environmental dimension of sustainability. It is a programme which the Economic Senate has been promoting for a long time. The World Forest Foundation of the Senate is particularly active in this field, in cooperation with the World Bank among others. Many of our senators have already adopted climate neutrality. Here, too, there is an opportunity for improved further developments.

17. Oslo Principles and an important Dutch Court Decision

It is also interesting that a group of leading philosophers and legal scholars with what are called "**Oslo Principles**" are developing a step towards global domestic law and global governance in a report on the position that the countries of the world are already obliged in currently valid international law to do everything possible and reasonable under fair conditions in order to solve the climate problem within the meaning of the 2 °C objective. There is a difference here between the obligations of developed countries and the least developed countries. It should be stressed that the right to impose economic sanctions on countries that fail to comply with the Oslo Principles is part of the programme. However, how this approach should be enforced is not discussed when strong nations such as the United States refuse to accept these legal principles. It is also not discussed how the relationship with WTO law may be if, for example, border adjustment tariffs are imposed on countries that do not abide by the Oslo Principles. Nevertheless, it is interesting that a legal position arises here which will possibly be confirmed again by international courts.

It is very interesting in this context that now for the first time a court, in this case the Dutch District Court of The Hague, in the **Urgenda case** (Urgenda is a Dutch foundation that campaigns for rapid transformation towards sustainability), has ordered the Dutch government to adopt significantly more stringent climate policies than previously planned. In addition to Urgenda, 900 Dutch citizens have also supported the suit. Specifically, the Dutch government is instructed to reduce emissions on its own territory by 25% within five years. The argument concerns the protection of Dutch citizens from the risks of climate change.

18. Europe on the road to greater unity—despite crisis

Europe is struggling to cope with the euro and the Greek crisis. But beyond Greece it is about much more—the further development of the European Union. Now an important step has been taken with the **Five Presidents Report**. The presidents of the five main EU institutions, Jean-Claude Juncker (European Commission), Mario Draghi (ECB), Jeroen Dijsselbloem (Euro Group), Martin Schulz (European Parliament), and Donald Tusk (European Council) have recently presented this report. The proposals for reform presented in it, which provide for more European integration in the financial sector, a more effective banking recapitalisation, and the beginning of a capital market union, among other things, are a step in the right direction. However, with respect to fiscal and structural reform they remain too vague.

In this context, Europe must especially recognise that the monetary union is a step away from fiscal sovereignty.§

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History has knocked very loudly on our door: Will We Answer?*

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Abstract

Today there can be no doubt that we live in a crucial time in human history. Our decisions and actions—or our failure to act—will have an impact on future generations for centuries, possibly for millennia, or even for geological time periods. In this article, the author talks about the challenges our next generations are going to face. A paradigm shift is needed to focus on the inter-linked threats to our shared future. Climate change is the defining issue of our time and the greatest challenge wherever we live. The climate war will not be won by General Twitter or Admiral Facebook. Social media can mobilize but the actual changes will require our live presence and commitment and changing the way we live. The World Future Council works to identify, spread and adapt the most effective laws and polices from around the world, which can provide the incentives required to change course. For, under the radar, such breakthrough policy solutions often exist somewhere and policy-makers elsewhere are keen to learn about them, but often do not have the information or capacity. The most important breakthrough policies have been brought together in the Global Policy Action Plan (GPACT), providing a coherent response to the interlinked global crises.

We may all be doing our best but, as Winston Churchill said, "It is not enough that we do our best, sometimes we must do what is required". Today we are heading for unprecedented dangers and conflicts, up to and including the end of a habitable planet in the foreseeable future, depriving all future generations of their right to life and the lives of preceding generations of meaning and purpose.

This apocalyptic reality is the elephant in the room. Current policies threaten temperature increases triggering permafrost melting and the release of ocean methane hydrates which would make our earth unliveable, according to research presented by the British Government Met office at the 2015 Paris Climate Conference.

Long before that point, our prosperity, security, culture and identity will disintegrate. A Europe unable to cope with a few million war refugees will collapse under the weight of tens or even hundreds of millions of climate refugees.

While scientists are increasingly in a state of panic about the state of the environment, the media—prone to exaggerate other news—downplay catastrophic threats to the planet. When *The Times* provided a realistic overview on 15th April last year, it felt obliged to include the

* This article is a slightly modified version of the author's opening speech at the World Future Forum, the 9th Annual meeting of the World Future Council, held on March 5, 2016 in Hamburg, Germany.

phone number of the Samaritans for those feeling distressed after reading it. One wonders how the Samaritans dealt with those calls!

Recently, *New York Times* columnist Paul Krugman, after noting that climate change "just keeps getting scarier," asked: "So what's really at stake in this year's (US) election? Well, among other things, the fate of the planet." A study by the US National Academy of Sciences last year concluded that claims of "de-coupling" economic growth from growing CO_2 emissions and resource consumption, i.e. that we can consume more and conserve more at the same time, have been based on false accounting, underestimating the raw materials required to create the products counted.[1]

So, why have we not already formed an emergency alliance to do everything humanly possible to stop and reverse the course?

Why have we not identified a hierarchy of risks and developed a common narrative and strategy? These are questions I often hear, especially from the young.

Our world today is different from what we had a few years ago. The basic argument has since been winning. As a columnist in the right-wing British *Daily Telegraph* I wrote recently in December 2015: "Whether or not you accept the hypothesis of man-made global warming is irrelevant. The (Chinese) Politburo does accept it. So does President Xi Jinping... This political fact is shattering for the global fossil industry and the economics of energy". What happened? The Himalayan glaciers and Tibet's permafrost are melting, threatening key Chinese water supplies.

The coal lobby is already seeing the writing on the wall: "We will be hated and vilified in the same way slave traders were," says the Secretary-General of the EU coal industry organisation.[2]

At the recent opening conference of the new WFC office in China it was very obvious that the Chinese authorities take the climate threat very seriously and are looking for solutions and partners.

The myth that climate change is a conspiracy to reduce freedom is spread by a powerful and greedy elite which has largely captured governments to preserve their privileges in an increasingly unequal world.

The real history of the past 40 years shows that the often disputed *Limits To Growth* report was prophetic, even for the USA: "The median US household income in 2014 was $50.000. If we had maintained pre-1970 productivity growth, it would have been $97.300".[3]

As a result the USA is now facing a youth revolt, with young voters backing socialism and most of them having a positive view of socialism than of capitalism.

But in many ways this is a conservative revolt against an insecure future, opposed to the disruptions of recent decades, including globalisation, corporate "personhood" and the resulting unaffordability of their parents' American dream.

The promised technological revolution does not excite them which is probably a good thing, for, to quote Rolf Kreibich, "there is not a single reference to sustainable development in the whole Big Data and Smart Data debate". Techno-Stress is causing falling gadget sales,

while in Japan, "people are becoming distrustful of technologies in a broad sense, as they are now often associated with fakeness and futility."

"No religious dogma is as powerful and dangerous as the dogmas of economists who assume that we will all become richer even on a burning planet!"

The new "satori" generation is anti-consumerist and looking for "enlightenment".

They and their peers in Europe and the USA are "less likely to endorse the importance of democracy; less likely to express trust in democratic institutions.".†

This is not surprising when policy-makers decide based on cost-benefit-analyses provided by economists, whose models are ideological, serving the interest of the privileged and discounting away the needs of future generations. Their tunnel vision fails to see that our economies depend on functioning ecosystems, whose collapse does not just destroy current GDP but the natural capital on which all future GDP depends.

Thus, their widely used DICE model calculates that, even a disastrous 4 °C temperature increase would only reduce GDP by 4% and a 6 °C increase would reduce GDP by less than 10%; nevertheless, this may make large parts of the planet uninhabitable. In such models, Africa could be gone but global GDP may still increase...

No religious dogma is as powerful and dangerous as the dogmas of economists who assume that we will all become richer even on a burning planet!

This dangerous nonsense still rules and even the UN SDG strategy suffers from it. "Given the existing ratio between GDP growth and the income growth of the poorest, it will take 207 years to eliminate poverty with this strategy, and to get there, we will have to grow the global economy by 175 times its present size"—an obvious impossibility.[4] The SDG Goal 17.1 calls for more trade liberalisation and power for the WTO—although environmental threats mandate the opposite: boarder tax adjustments to stop environmental dumping.

How is it possible that we have lived so long according to this narrative which disconnects us from our earth and now threatens our survival? In 1980 the US-based Heritage Foundation used the election of Ronald Reagan to impose the agenda still ruling the world, organizing 20 project teams involving 300 participants to develop policy recommendations for all government departments. These were published in a 1000 page book, *Mandate for Leadership: Policy Management in a Conservative Administration*. There was of course nothing "conservative" about the radical disruptions planned. But the recommendations were well argued, and many were implemented, as there was nothing available to counter them. To quote Margaret Thatcher, "Economics is the method: the object is to change the soul".[5]

Today, even the business publication *Forbes* acknowledges that "Capitalism has... devastated the planet and has failed to improve human well-being at scale".[6] So the awareness

† See World Values Survey, 2015.

has been raised and we now need a methodology on how to end this devastation. While we do not have the resources the Heritage Foundation has accumulated, at the expense of people and planet, we will have many allies on the path to Earth Trusteeship and Earth Justice.

But we need to re-think what we have done so far, not because it is wrong, but because it is no longer a sufficient response to the Earth Emergency. Asked at a recent conference why she was talking about climate change and not about jobs, trade union leader Sharan Burrow replied: "Because there are no jobs on a dead planet!" The eco-industrial transformation will of course generate many millions of new jobs, but she understands the hierarchy of risks and dangers...

Our challenge is immense but not new. "There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order to things. Because the innovation has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new," to quote Machiavelli's *The Prince*, published in 1532.

As I said, we have many powerful allies:

- our living planet which can still respond and recover if we change course before irreversible tripping-points are reached.
- the youth of the world who see that the promises of the current global narrative are hollow and are in search of a credible alternative.
- the global unprotected who are realizing that, while the new world order claims to have no ceiling, it definitely has no floor.
- our ancestors who have put their trust in us to ensure that their lives and achievements have not been in vain.

  and

- all future generations of life on earth who are rooting for our success as we have the historically unprecedented power to decide if and how they will live!

The WFC Global Policy Action Plan (GPACT) is our manual for responsible leadership. It summarizes key policy recommendations for people and planet, now under threat from the consequences of the Heritage Foundation policies. It aims to replace the Washington Consensus—now increasingly rejected—with a new consensus, which may become known as the Hamburg consensus!

The fallacies and contradictions of the old narrative have been exposed and changes required discussed at great length.

We must now build new alliances, moving beyond the infighting, backbiting, bureaucracies, narrowness and jealousy so prevalent among NGOs and their supporters.

Many, in business and civil society, prefer easier to achieve voluntary self-regulation. The recent first global overview of self-regulation proves them wrong, showing that in 82% of the schemes assessed, voluntary measures failed.

The level of protection delivered was much lower than a law would have delivered. A Welsh charge on plastic bags cut their use overnight by 80% while an English voluntary measure achieved a 6% drop in seven years....

In many areas, legislation will be a challenge. The easy win-win scenarios are often a myth. The Climate Legacy Initiative concludes that the taxation required to lead to adequate demand reduction will cause "significant social pain". Politicians fear their voters rebelling, yet need to understand that nature rebelling will be a more serious matter, for we cannot negotiate with melting glaciers or spreading deserts.

"The unused global renewable energy potential wastes trillions of dollars annually."

The acclaimed economist Dambisa Moyo laments "an erosion of productivity around the world" which she cannot understand, describing it as "really weird".

Considering the urgent needs of people and planet on the one hand and growing global unemployment on the other, this "weirdness" clearly has a cause, namely the perverse dogmas worshipped by Moyo and her fellow economists.

They claim that the now urgent reforms are too expensive, implying that we cannot afford to live on this planet. But if a society has the human and natural resources to produce, it can also finance.

First, we need real world accounting. The unused global renewable energy potential wastes trillions of dollars annually. Yet, while every coal mine closed is lamented as a waste of industrial capital, the immensely larger destruction of natural capital caused by not maximising renewable energy production has been ignored.

Creating ("printing") new money by central banks to save the financial system was quickly accepted. Yet funding the urgent transition to sustainable and regenerative societies in the same way has been a political taboo, until the WFC showed last year how this can be done to fund the production of new goods and services: 100% renewable energy, retrofitting buildings, sustainable transport systems, etc.—also generating millions of jobs in the Global South, reducing the pressures to migrate in order to survive.

Our shared future requires a cohesive plan for step-by-step policy reform and the WFC GPACT is the first attempt to design one—not the usual endless wish list, but a priority policy instruction manual, building, wherever possible, on national and regional policies already working, analysed by us, according to the principles of Future Just Lawmaking already agreed by the international community.

GPACT summarizes the minimum policy reforms required to build a world where solutions can again grow faster than problems. It aims to enable such a world, not pretend that we already know all the solutions. As Martin Luther King said, laws do not move the heart, but they restrain the heartless—those who have built the dictatorship of the present benefitting them at the expense of the future of life on earth.

GPACT sets out the path and the milestones to a sustainable future:

1. Environmental Education

We have identified the best law—from Maryland, USA—and are now working to spread it.

We have also identified the best programmes to teach environmental literacy in business schools and to students of economics (see futurepolicy.org).

2. Revitalising Democracy

We have identified and researched the exemplary Icelandic law, which ensures that private money cannot buy elections. Spreading this will be a huge exciting challenge.

3. Adopting Alternative Progress Indicators

Again, a small country, Bhutan, took the lead. The EU BRAINPOoL project shows the way ahead. We also need to reform accounting standards and mandate longer time horizons for credit rating agencies.

4. Ensure the Political Representation of the Needs of Future Generations

The WFC played a key role in building the exemplary Welsh legislation, based inter alia on the experiences of the pioneering Hungarian Parliamentary Ombudsperson for Future Generations, WFC Councillor Sándor Fülöp.

5. Ending Crimes Against Future Generations

We have identified pioneering judgments and the obstacles facing their implementation.

6. Re-direct Military Spending and Foster a Culture of Peace

The WFC Peace and Disarmament Commission has produced a handbook on nuclear disarmament policies for the Inter-Parliamentary Union (IPU) and initiated a broader security debate by highlighting the links between climate and nuclear risks. It has also brought the Argentinean programme for the surrender of firearms to Bosnia.

7. Incentivize the Shift to 100% Renewable Energy Production

The WFC's unique role in spreading best policies, especially feed-in-tariffs, is widely recognized, and has included over 100 hearings with parliamentarians from over 50 countries.

8. Regenerative Cities

Our best policy programme has been presented to decision-makers in Europe, Africa, the Middle East and China and we are now preparing to introduce this at Habitat III.

There are now exemplary Chinese laws, e.g. ensuring that profits from falling oil prices are retained by the government to fund conservation and anti-pollution measures.

9. Preserve Healthy Eco-systems

Ocean acidity is now increasing at ten times the highest rate during the past 56 million

years. We must strengthen and spread the Law of the Sea, as well as the exemplary other ocean, forestry and biodiversity laws from Palau, Rwanda and Costa Rica, which we have honoured with the Future Policy Award.

10. Green Tax Reform Including Carbon Taxes

We must shift taxation to what is bad and scarce. We should also work to spread policies which ensure that our financial system enables real wealth creation and no longer favours speculation and debt.

11. Liberating Enterprise

Human ingenuity and risk-taking must be incentivized to serve the common good. Benefit corporations (Maryland, USA), the TOP Runner programme (Japan) and the Cradle-To-Cradle design principles provide examples ready to be replicated.

12. Protect the Vulnerable

During the unavoidable chaotic transition which is now coming, it is vital that we protect children, women and the large and increasing numbers of persons with disabilities worldwide. The WFC has identified and honoured and works to spread exemplary policies for the right to food (Belo Horizonte) and child safety (Zanzibar Act), to protect women and girls against violence (2014 FPA winning policies) and abolishing barriers for persons with disabilities (Zero project/ WFC policies).

The benefits of tackling these inter-connected challenges jointly are obvious. But while the WFC can bridge policy implementation gaps, the bottom-up pressure on policy-makers must increase to help them to withstand the lobbyists of the status quo.

We are now working to find the resources and allies to initiate—to quote Naomi Klein, "a spasm of rapid-fire law-making, with one breakthrough after another".

The moral revolution which ended slavery was not achieved just by petitions, nor will the transformation now needed be won by General Twitter and Admiral Facebook. You cannot fight massively entrenched power with statistics or appeals to reason alone. Our opponents are poisoning our common well—a capital crime for our ancestors.

To quote the US PR expert Frank Mankiewicz, "The environmentalists are going to have to be like the mob in the square in Romania (which quickly ended the Ceaucescu dictatorship) before they prevail."

We also need to project a powerful and attractive vision of our shared future as earth citizens, in a world of scarce resources. As Chandran Nair said, it will be a world of "fewer car races and more dancing competitions", but a vibrant and flourishing world of education, arts, music, research, sports, spiritual quests and social interaction. My biologist grandfather envisaged that in such a world, life's meaning would not "be sought behind the objects but behind the subjects".

The choice is up to each one of us. History has knocked very loudly on our door. Will we answer?

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The Mind of the Leader*

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Abstract

The mind of the leader as a scientific matter, emerges with the development of modern psychoanalysis, modern psychology and contemporary political psychology. The focus on the mind as a scientific matter in the social sciences led to the salience of understanding the psychology of human behavior. It was Freud who provided us with an insight into the structure of personality that in various forms continues to be important. It was Harold Lasswell, a former President of the World Academy of Art & Science who adapted the Freudian categories to the study of personality, structure, and leadership. Central to the individual is the human perspective which comprises of components of identity, the expression of human demands, and the restraints of morality and cultural expectation. These issues were formulated in terms of homopoliticus. This type of personality represented the perspectives of private motives, displaced on public objects and rationalized in the public interest. The paper then proceeds to discuss the importance of early childhood and leadership and illuminates various forms of leadership styles from narcissist to democratic. The paper then discusses the thinking skills that leadership decision-making requires for constructive social performance. Performance is identified with decision making and the architecture of decision making.

The study of the mind is a science whose advances are most recent in the history of the human species. We owe a great deal to the psychoanalyst Sigmund Freud and his followers who developed the study of mind as an important component of the study of personality. The direction on Freud's work, and of many of his followers' work, was aimed at the therapeutic implications for medically treating patients requiring a better understanding of the human personality.

The term 'personality' is used to designate the principal traits displayed by an individual as a participating member of society. In the scientific exploration of personality it seemed apparent that every public and private relationship of the individual required exploration.

Therefore, the implications of Freud's work also generated broader concerns and applications of its insights that could be applied to the emerging fields of the social and behavioral sciences. Among the most important scholars on seeking to explore the broader

* The article is based on the author's lectures for a post graduate level course on "The Essence of Leadership" from March 30-April 3, 2015 at the Inter-University Centre, Dubrovnik, Croatia.

implications of a deeper understanding of personality was the political scientist and jurisprudence scholar Harold D. Lasswell.

"A central thing in Lasswell's thinking was the role of the individual in social process, in the process of power arrangements, in the processes of constitutional architecture and the centrality of the individual in world public order."

Lasswell was a Fellow of the World Academy of Art and Science as were several of his colleagues and collaborators. Indeed, Lasswell emerged in the World Academy at its founding, and later became a president of the Academy. It is impossible to say what Lasswell's single most contribution was to scholarly enlightenment. Scholars who know his work have said that when they pause to expand on his insights, his presence was not there, he had already moved to another challenge and another frontier of the social and behavioral sciences.

However, it may without a doubt be asserted that he was in essence the founder of a distinctive field of the social and behavioral sciences, namely the field of political psychology. Although he had moved his interests into world politics, world public order, human rights, the law of space, oceans and the law of war, a central thing in Lasswell's thinking was the role of the individual in social process, in the process of power arrangements, in the processes of constitutional architecture and the centrality of the individual in world public order. A focus on the individual self-system in the context of world public order requires an understanding of the functions of personality, its constructive potentials and its destructive capacities.

The question of a deeper understanding of the mind provides us with a deeper understanding of the role of the individual in the system of public order. Additionally, observation will disclose that human communities often reflect complex forms of stratification. Some human beings gravitate to the top and hence provide scope for the study of a segment of society identified as the elite. Those segments that are not among the most conspicuous or influential, and are not in the position of the elite, are the non-elite.

It is certainly a matter of great interest to know what types of personalities gravitate to the position of the elite and the influential and what types of personalities are not so fortunate.

Lasswell opened up a distinctive line of inquiry to explore these issues in one of his earliest books, *Psychopathology and Politics* (1930); *World Politics and Personal Insecurity* (1935); *Power and Personality* (1948); *Power and Society* (1950). In these books Lasswell was trying to broaden and deepen the emerging science of political science. In what follows are a selected number of quotes from *Psychopathology and Politics*, which provide an orientation to the role of mind in the study of leadership:

- *"Political science without biography is a form of taxidermy."*

- *"Political man [displaces] private motives… on to public objects [subjecting the former to] rationalization in terms of public interest."*
- *"Political movements derive their vitality from the displacement of private affects upon public object."*
- *"Political crises are complicated by the concurrent reactivation of … primitive impulses."*
- *"Political symbols are particularly adapted to serve as targets for displaced affect because of their ambiguity of reference, in relation to individual experience, and because of their general circulation."*
- *"The political methods of coercion, exhortation, and discussion assume that the role of politics is to solve conflicts when they have happened. The ideal of a politics of prevention is to obviate conflict by the … reduction of the tension level of society by effective methods of which discussion will be but one."*

In this book, Lasswell utilized methods of clinical psychology to generate provisional but potentially significant insights that had both general and leadership implications of personality. The intellectual background against which he was writing stressed the institutional and structural components of political life and not the salience of human personalities in these institutions and structures. The conventional approach excluded the salience of the human personality and the importance of human perspectives within the framework of culture and civilization.

A specific focus on leadership would require a focus on the mind and personality of the leader, in short, the human dimensions of leadership. These dimensions must perforce be person-centered as a key orientation. Indeed, the person-centered approach makes the life history of a leader an important source of insight into the political leader, the business leader, the rectitude leader, intellectual leader, or indeed, any other social context within which leadership is needed and required.

There were two aspects of Freud's work that Lasswell found particularly important: an understanding of the unconscious and an appreciation of free association as an important blade in the armory of human thinking. Lasswell's work with patients confirmed his understanding of the importance of the unconscious, although the line between the unconscious, the semi-conscious, and consciousness Lasswell saw as permeable. The implications were that a great deal of memory is removed from consciousness and stored in the unconscious. It is in the unconscious that the powerful impulses that drive the personality to strive for leadership and more may ultimately be found. The roots of these impulses may be found in the experience of deprivation and the pre-adult's effort to overcome it. In simple terms, if the child is hungry it will express itself by crying incessantly to draw attention to itself, and receive the gratification of feeding.

If the deprivations that the pre-adult experiences are sustainable and intense, these deprivations will shape the unconscious in ways that in later life may well produce mental illness. On the other hand, if the deprivations experienced are in some measure moderated, they will leave the residue of emotional impulses that may later express themselves in striving for achievement and for possible leadership roles. Lasswell's great insight here was

that the personality's cognitions, feelings, and impulses are in reality not matters of conscious awareness, but an unconscious psychodynamic force of emotional energy.

In general, the individual person spends much psychic energy forcing thoughts from the unconscious to remain there as repressed unconscious impulses.

Since these impulses cannot be expressed directly, they are often expressed indirectly and one of the most important ways indirect emotional impulses are managed is by the process of rationalization. In short, the individual has a feeling and the individual provides a conscious rationalization of that feeling, although in reality the feeling is there as a function of the storage of unconscious emotions.

Accepting the general form of the history of personality from the Freudian tradition, Lasswell adapted Freud to the purposes and objectives of the social sciences. He adapted it to describe the developmental history of the political man. It is explained as follows:

$$p\} d\} r=P$$

- The first "p" represents the private motives of the individual as they evolve and are organized in relation to the family and early years.
- The second term "d" describes the displacement of private motives from family orientation to public objects.
- The third symbol "r" signifies the rationalization of the displacement in terms of public interest.
- The formula, therefore, reads as follows: private motives displaced on public objects, and rationalized in the public interest constitute "homopoliticus," the political man.

We would say that the formula has broader implications for leadership than the purely political arena.

1. Personality Structure and Leadership

From the time that Lasswell wrote *Psychopathology and Politics*, psychoanalysis provided advanced thinking, which came in the form of the psychology of the ego. This led to Lasswell's formulation of the perspective of the individual in society. In Lasswell's view, the perspective of the individual is composed of three identifiable components:

I – a perspective of identity (influenced by the id)
II – the perspective of claim or demand (influenced by the ego)
III – the perspective of expectation (influenced by the super ego)

In effect, the perspective of a person will be significantly influenced by the unconscious characteristics of that person, which Lasswell characterized as the perspective of identity. This is not a static notion, however, since the perspective of identity implicates the id and the unconscious of psychoanalysis, it has a significant influence on the behavior of the person. Indeed, Lasswell's political formula provides a strong foundation for the influence of the unconscious on the evolution of the power-centered personality.

The second aspect of perspective is the perspective of claiming or demanding, access to the shaping and sharing of the basic values of coexistence. The perspective of demand is essentially the ego's rational orientation to the environment in order to secure the satisfaction of value wants and value needs. It will be obvious that the energy driven by unconscious impulses will have an impact on the expression of demand-value objectives. In this sense, the perspective of demand will perform some kind of guidance role on the direction of energy impulses emerging from the perspective of identity.

The perspective of expectation in a sense collapses the perspectives experienced in cultural norms, standards, morals, and ethics. In this sense, both the direction of identity impulses, the direction of value demands or claims are tempered by the expectations inherited from cultural expectations and rules that include morality and ethics.

The perspectives of identity, demand, and expectation reflect diverse components of the personality system. All of these components are affected by, or influenced by, the signs and symbols that emerge from the environment within which the self-system interacts. Understanding the behavior orientation of the individual, according to Lasswell, requires us to take note of what he called the "triple appeal principle." In short, communications from the environment will influence the pattern and level of intensity of the identity system, it will influence the consistency and tenacity of the demand for values and it will influence the perspective of expectation, which in turn will influence the other aspects of personality as the other aspects of personality are influenced by the signs and symbols of the environment.

2. Defining Perspectives

Identifications: Self-definition of the individual as a member of particular categories or groups of individuals. Demands: Expressions of desired outcomes, based on values. Demands rage broadly in terms of their intensity, from mild preferences to assertions of inviolable rights; Expectations: Beliefs about past, present, or future states of affairs, apart from demands or identifications.

3. Early Childhood Development and Leadership

In the cultural framework of child caring and rearing, society often overlooks the fact that an infant's sense of time is radically different from that of an adult. This means that an innocuous deprivation is a radically different experience between adult and a child. This implies that in the ordinary experiences of child caring and rearing, there may well be overlooked and serious elements of deprivation, which will affect the child's behavior. In order to get a response to the deprivation, the child may be energized to use whatever techniques it has at its disposal to draw attention to itself. Built into the psychology of the child will be the notion that access to gratifications requires the discharge of strong emotionalized impulses.

Therefore, we must confront the uncomfortable fact that leadership is a matter of emotional impulse and intelligence that finds its roots in some measure of deprivation in the child rearing experience.

Another complex aspect of the evolution of the infant is the complex identity pattern, which influences the identity of the child and relations to the parents. In classical Freudian terms,

progress from infancy to maturity requires the internalization of the mother figure as a love object and later as love object lost. The love object lost phase is accompanied by the internalization of the father figure as a symbolic representative of society and culture (the oedipal complex). Such a person has a capacity (and therefore maturity) to seriously regulate the untrained impulse bent on gratification of some sort, including political gratification. With regard to the environment of signs and symbols, Lasswell himself provides us with an excellent summary:

"The environment of the infant and child is teeming with words of ambiguous reference, which take on positive or negative significance long before there is enough contact with reality either to define their frames of reference, or to distinguish those whose frames of reference are wholly interdeterminate. As an "adult", the individual continues to respond to these articulations in many childish and juvenile ways, often imputing some special and even awesome significance to them. Such words are 'law and order', 'patriotism', 'a gentleman and a soldier', 'truth', 'justice', 'honor', 'good', 'patriotism', 'bad', 'loyalty', 'duty', 'Germans', 'French', 'Negroes', 'national hero', 'good citizens', 'national interest', 'king', 'constitution'; but these words do not stand alone in primitive concentrations or irrelevant affect. The whole of our vocabulary, plus our non-verbal symbols, is caught in the mesh of early structuralizations of this kind, so that the inner meaning of our symbols is never revealed except through the technique of free fantasy."†

It is worth noting the importance of the developmental stages of personality, these are as follows:

- Infancy
- Childhood
- Juvenility
- Adolescence
- Young Adulthood
- Mid-Adulthood
- Old-Adulthood

If we accept the principle that leadership in the personality system is connected to the impulse—directed at the acquisition and exercise of power as in Lasswell's "*homo politicus*," we might also consider that leadership may be directed and sustained by impulses and emotional intelligence in other directions in the social process. Here, it could be business leadership, academic and intellectual leadership, scientific leadership and indeed, leadership in terms of functional roles implicating all the values in society.

The political leader acquires perspectives, emphasizes the demand for power, expects power to exert a decisive influence on value outcomes, justifies power in terms of common values, acquires skills sufficient for at least a minimum degree of effective political participation.

To pin leadership capacity on the element of deprivation in the shaping of the personality system in early years means that without a deeper appreciation of the psychobiography of

† This quote is abstracted from Lasswell and McDougal's unpublished manuscript dealing with law, science, and policy

a leader or potential leader it cannot be assumed that there will be a predicted good or bad leader. This is a challenge.

The salience of resolving the period implicating the Oedipal complex is when the relationship of the child to family authority undergoes relatively rapid and decisive crystallization. It is a time when the physical and personality development of the child has prepared him to expand his activity. He is on the verge of moving outside the immediate ken of his nurse-protector, thereby enlarging the scope of his mobility and independence. At this point a conflict breaks out between the tendency to stay in the older and safer grooves of conduct, and to launch out beyond them. The conflict betrays itself in many ways, notable shrinking from new opportunities, and remaining closely attached to key figures in the primary circle. In this period the Oedipal conflict must be resolved, or distortions of growth occur.

When this conflict is successfully resolved by the child a new set of goals is adopted in place of the demands for immediate body contact and for continual protection and supervision; and also in place of the destructive demand to annihilate the rival. The new goals implicate a wider context of human beings, and in general many more objects in time and space.

Specifically, they include the copying of adult patterns of conduct and the sharing with playmates often sub-culture of children that stays in touch with though remaining distinct from the world of adults. Directing energy toward progressive goals of this kind, the child is able to hold his destructive tendencies in check and to forestall acute internal crises of anxiety in which guilt and fear predominate. The Oedipal phase has successfully surmounted the personality that has achieved a major consolidation, and is able to acquire the culture of his community at an accelerated rate.

The salience of this phase of development for the power leader personality is the light it exhibits for understanding the totalitarian personality and the features of prejudice and discrimination that drives it. Moreover, the first cousin of the totalitarian personality is the prejudice-prone authoritarian personality. The totalitarian personality reproduces a dangerous leader. The authoritarian personality, similarly, inflicts on society a dangerous form of leadership.‡

Returning to *homopoliticus*, we undoubtedly see that what emerges from the construction of personality in leadership terms represents a formidable challenge of understanding. Lasswell's summary of the developmental theory of political man is as follows:

Political man is an expansion of the conception of the political man in terms of private motives displaced upon public objects and rationalized in terms of a common good.

We now speak of power demands in the primary circle as being directed to secondary circles and justified in terms for "displacement" and "rationalization" and we use "defense" of the self against low self-appraisals. It is clearer that the "public objects" are the institutional patterns of power in a given social process.

Since Lasswell wrote, we have a deeper understanding of the wide range of personality types whose behavior may be conditioned by the level of deprivation experienced in early years. We can isolate approximately seven distinct personality types:

‡ These materials are abstracted from the unpublished manuscript of Lasswell and McDougal on law, science, and policy.

I – the narcissist
II – the obsessive compulsive
III – the Machiavellian
IV – the authoritarian
V – the paranoid
VI – the totalitarian
VII – the democratic

"Good leadership has the intellectual capacity to identify what a problem is and why that problem may be a problem of importance to the social process and the public order."

Many of these categories represent some forms of psychopathic disorder. Narcissism, for example, is a psychopathic disorder but they frequently straddle the line between egregious behavior and behavior that can be tempered. However, political psychology has identified all of these categories as reflected in modern political leadership.

The critical question is the extent to which such leaders may, under appropriate environmental circumstances, displace their private pathologies on public objects so that those public objects become a realistic part of the personality system. Indeed this may be achieved if these public objects can secure a compelling rationalization, a justification as representing the public interest. In short, leadership requires emotional impulse and intelligence, requires a judicious displacement if possible on defensible public objects and can be secured by a rationalization consistent with a public interest.

Some theorists recognize the importance of emotion in leadership and stress the salience of emotional intelligence. This includes self-awareness, self-regulation, motivation, empathy, and social skill. Other theorists consider that there is a distinction between behavioral leadership and positional leadership. Here, the example is given of Nelson Mandela, who falls into the behavioral leadership category. Mandela's emotional intelligence lay in his capacity to express collaborative verses totalitarian behavior and a capacity to never give up against seemingly impossible odds.

In today's leadership industry, many promoters of leadership maintain a pocketbook of precepts that are the recipes for good leadership. Success in leadership requires that the leader creates and maintains a vision, creates goals for the realization of the vision and provides for strategic and tactical direction to achieve the vision.

Good leadership requires followers to be influenced and good leadership will be receptive to the influence of followers. The leader must think practically about the specific tasks, which need to be implemented to secure a vision. These tasks must be utilized to their full capacity for as long as possible until the vision is secured.

4. Problem Solving, Leadership Roles and Intellectual Skills

4.1. Problem Identification

What we expect of good leadership is that good leadership has the intellectual capacity to identify what a problem is and why that problem may be a problem of importance to the social process and the public order. In order to identify a problem of importance to social process the leader has to recognize that the problem itself is an outcome of human interaction. This would still require a fairly disciplined method for identifying and contextually locating the problems that represent a challenge to leadership responsibility. This means that we must have some shorthand manageable method for mapping the context out of which the problems emerge.

The contribution of WAAS Fellows to this task was the development of what they called a "phase analysis" at any level of abstraction and inclusivity. The phase analysis represents the markers of social interaction among human beings, implicating values and value problems. The markers essentially would represent from this perspective particularized contextually located problems. For example, the first marker would be the **identification of participators** and it would be important to know who the participators are and what the problems are of participation. The second marker would include the **perspectives of the participators** and we would like to know what the problems are of the perspectives of identity, demands for values, and the demands relating to expectations. The third marker would identify the **basis for power** and or authority available to the participators and therefore, includes a concern for the problems relating to the basis for power. Social interaction is located in situations of space and time these situations therefore could be special, temporal, institutional, or pervaded by the conditions of crises. We therefore need to know the **problems related to situations**, which is the fourth marker. The fifth marker would relate to the **strategies** and the problem generations by the utilization of diverse strategies. Strategies can be persuasive or coercive; they could include strategies of economic coercion or persuasion, strategies of diplomacy and communication, strategies in the deployment of propaganda and influence peddling as well as strategies of major and minor coercion. The sixth marker would relate to the problems relating to the **outcomes** of value shaping and sharing. The seventh marker would look at the longer-term **effects on the social process** generated by these outcomes and their problems.

One of the most important leadership qualities which can be facilitated by this methodology is the critical function of predicting problems before they happen for the leader. This is an underappreciated leadership skill of the mind, but we would submit it as a critically important skill.

4.2. Problem Solving

The decision-maker as leader would have an advantage if he were able to master some of the identifiable intellectual tools that guide the process of problem solving (these skills may be employed additionally by the leader's advisors).

The first of these tasks is the task of goal or **value clarification**. The problems that emerge from the various aspects of social process invariably implicate claims for values or claims for the denial of these values. This requires the leader to have a clear picture of what values are at stake in the context of problems that he seeks to regulate.

Trends in decision relevant to the problem before the leader. A leader would be advised to understand what the relevant trend in leadership decision making was, with regard to the particular problem in the particular context. In short, the leader has to represent a perspective that accounts for history.

> *"Lasswell saw the importance of both the unconscious and the element of creativity reposing in the thinking process of the mind that function apart from logic, namely free-fantasy."*

The leader would have to look at the trend in decision in terms of the **conditions/cause and consequences**, which inspired the trend in the first place. This concern for cause and consequences would require the leader to engage in at least a rudimentary form of scientific inquiry. The leader decision-maker will then have to consider what the implications are of an expected decision making intervention, under the present framework and trends of conditions. Here, the leader would be advised to cultivate a sense of the capacity to **predict or forecast**. In short, the leader may indulge in a forecast conditioned or formulated as a developmental construct. In short, what is the worst-case scenario that might emerge from a given set of trends and conditions? Second, what is the best-case scenario that can emerge from that situation?

With the guidance of a developmental construct indicating the best and worst case scenario, the leader decision maker may well have to consult within himself the idea of a creative or alternative mode of thinking that provides him with a creative solution, which approximates the best case and avoids the worst. Here the mind may well be guided by the creative and possibly constructive possibilities that may emerge from the disciplined use of free fantasy.

As earlier indicated, Lasswell saw the importance of both the unconscious and the element of creativity reposing in the thinking process of the mind that function apart from logic, namely free-fantasy. A capacity to develop the free-fantasy aspect of thinking, Lasswell believed, would open up the consciousness to constructive and creative possibilities reposing in the mind's framework of free-fantasy and the psychic resources to which it can have access.

4.3. The Thinking Skills of Decision Making

The skills of decision-making will be enhanced if the thinking skills that constitute the architecture of decision making are both understood and utilized. WAAS Fellows Lasswell and McDougal identified seven thinking skills that are implicated in decision making. These thinking skills in effect constitute the architecture of decision-making. The leader would be advised to understand the leadership role in decision-making and that requires some knowledge of the workings and interrelationships of the key identifiable functions relating to the architecture of decision-making. It is possible that leaders intuitively incorporate these ideas into the structure of decision-making but if they were more consciously understood,

the possibility of improved decision-making could be enhanced. The following are the seven identifiable functions:

I – Intelligence
II – Promotion
III – Prescription
IV – Invocation
V – Application
VI – Termination
VII – Appraisal

It may well be argued that the deeper the understanding of these decision functions, the more effective would be the discharge of decision making roles in the good leader. In conclusion, the tools that the leadership in WAAS has provided are a useful toolkit of thinking skills that would benefit the mind of a good leader in the discharge of leadership responsibilities.

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The Future of Higher Education:
The Role of Basic Values

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Abstract

In this paper the author identifies the importance of the development of thinking skills in the exposure to higher education. It underscores the intellectual procedures necessary for identification and the solving of problems across disciplinary lines. The paper also explores the problem of the is and the ought in the processes of higher education. It underscores the central issue of shared enlightenment as a major purpose of higher education. It specifically focuses on the role of the individual and the culture of human rights in the context of higher education values. The paper provides a summary of the most important contemporary conceptions of human rights and justice. The paper then outlines the values encased in the International Bill of Rights and its importance for the future of higher education. The paper provides a clarification of the most basic values implicated in the contemporary higher education process.

Education, and particularly higher education, imparts to the participants in education fundamental thinking skills that with extended immersion in educational processes are fundamentally concerned with human thinking and how to improve the human capacity for thinking in terms that are socially and personally constructive. Thinking skills are intimately integrated into the human subjectivity of human perspective. Human perspective in turn, is intimately connected with purpose of human activity. Purpose of human activity is overwhelmingly implicated in the pursuit of human values. The educational process that seeks to improve the methods of human thinking are therefore inextricably bound up with the training of human perspective and human perspective is intricately bound up with the pursuit of human values.

The fundamental idea behind all educational processes is still the challenge of education to understand how human beings think, and how to improve on the process of thinking. The thinking process that evolves as a component of human subjectivity is significantly directed at the need of the individual self-system to identify, understand, and, ultimately, solve problems. The importance of problem solving in the context of the future of higher education is complex since the knowledge-generated fields are organized in terms of discreet disciplinary methods and procedures. Problem solving must therefore find the method

and the means of exploring, comparing, contrasting and integrating a universe of multiple disciplines all of which are relevant to the evolving human subjectivities of the participators in higher education.

"Creativity seeks to advance knowledge and understanding across disciplinary lines and fearlessly embracing new paradigms of knowledge creation and the social responsibility for innovation."

Dewey in his famous book, *How We Think*,[1] sets out the challenge that all human beings from infancy through life have to develop the thinking skills necessary to successfully identify the problems they encounter, and to develop increasingly sophisticated intellectual procedures to solve the problems that have been identified. Problem solving involves a critical faculty in the self-system of the human being. This faculty is the faculty of making choices about the implications of values and problems of importance to the individual and society. In effect, this means that choice itself is a matter of the individual exercising the challenge of informed decision making, hopefully in the interest of the individual and the common interest of the community.

Dewey and later Lasswell sought to clarify the precise intellectual procedures that an individual may acquire and refine in order to be a successful participator in solving personal and social problems.

1. Intellectual Procedures for Problem Identification, Problem Solving and Decision Making

These intellectual procedures and skills are each distinctive and, at a sophisticated level, involve methods and procedures of increasing skills and sophistication. These thinking skills require immersion in knowledge—generating disciplines as well as integration of that knowledge in terms of problems and solutions in the form of decision making that challenge the intellect in terms of decisions that are good for the individual, good for society and for those that reproduce the opposite result.

The intellectual tools identified by Dewey, Lasswell and their associates are as follows:

2. Five Intellectual Skills Critical to the Future of Higher Education[2]

The Relevance of Values and Goals[3]

– The clarification of values and goals (the relevance and challenge of values)

The Description and Relevance of Trend[4]

– The description of trend (historical description and analysis)

The Relevance and Examination of Scientific Conditions[5]

– The analysis of conditioning factors (the focus on the causes and consequences shaping existential phenomena)

The Relevance and Salience of Projection of Future Developments[6]

– The projection of future developments (the relevance of predictive forecasting)

The Relevance and Consideration of Alternative Basic Policies in the Production and Distribution of Values (Creative Thinking)[7]

– The invention, evaluation and choice of value priorities and alternatives

It will be apparent that problem identification and problem solving are crucial features for the future of higher education. Creativity is a major challenge to conventional higher education with its focus on disciplinary autonomy. Creativity seeks to advance knowledge and understanding across disciplinary lines and fearlessly embracing new paradigms of knowledge creation and the social responsibility for innovation.

The fundamental question that we now pose is: What is higher education for?

The answer is that higher education is for the defense and promotion of the basic values that are crucial for the wellbeing of the individual and all members of society. A major emphasis of higher education is the reproduction of shared enlightenment on the most inclusive scale that is institutionally possible. Enlightenment of course means the generation of new knowledge as well as the responsibility of how new knowledge is transmitted under conditions that sustain high ethical and moral standards of responsibility. As Einstein once suggested, new knowledge should be a blessing and not a curse to humankind. New knowledge also implicates the fundamental values inherent in the autonomy of the university as well as the salience of academic and intellectual freedom. This of course does not tell us precisely what the values are, how they are to be ascertained and clarified and how we are to secure and advance rational choices directly concerned with problem solving that improve the individual and aggregate value positions.

One of the important insights about values and human beings is that all human beings participate in the social process and are asserters of value demands which they need to survive to improve their life situation and to contribute in general to aggregate social wellbeing. Thus, human beings are not in a position of trying to find their values, they already have them. But their understanding of how these values are given content and operational salience is more complex.

"The very act of posing the question in general terms about the importance of values is an indicator that the person posing the question comes with ideological beliefs that may characterize the particular social context."

Struggling with this problem may explain why dramatic shifts in value orientation are rather unusual. A change in value orientation may be the result of being exposed to a wide range of conflicting social configurations. Such configurations may generate deep internal conflict in the personality. One such example is Gautama Buddha's transformation from a conspicuous and wealthy prince to having a career of deep contemplation and teaching. In general, students in higher education may also be confronted with new configurations, which reshape their value orientations. Rapid advances in knowledge and technological generation intensify the challenge of sustaining a value orientation or changing it among the participators in higher education.

Higher education will challenge personal beliefs and generate value conflicts and intensify searches for both value content and value procedure.

3. The problem of the "is" and the "ought"

The fundamental problem concerning the content and the clarification of values is the determination of why a value should be preferred and given high deference over other values. In effect, this is a search for understanding the truth of a value proposition. Technically speaking, the method used by philosophers is that a value is entitled to its currency as a value when it is justified by reasons external to the statement maker. Even with this it is difficult if not impossible to adequately justify statements of higher general preference like the deference to be given to the principle of human dignity. In this sense the justification of values by transcendent religious experience can sometimes be a strut to support the human dignity principle. But, justification by divine rule, or some other transempirical source does not provide an objective validation of the principle. In this context, a statement maker proposing value and relying on divine revelation has a burden of objectively proving the divine source of the value.

To overcome the problem posed by the "is" versus the "ought", WAAS theorists provided a clarification not only of thinking in terms of the "is" and the "ought" but also other forms of thinking such as trend thinking, futuristic thinking and creative thinking. Since five different modes of thinking are required to understand and solve value problems, the problem solver has to integrate the five intellectual tasks generated for problem solving. With the guidance of these procedures, the gap between the "is" and the "ought" is avoided by the relevance of human choice and decision-making. In short, the "is" and the "ought" and other methods of problem solving are crucial to the enhancement of rational choices in the interest of the individual self-system and the common interest of the community as a whole.

This has left theorists to postulate the principle of human dignity as the overriding goal value that should direct the future of higher education. The challenge to this approach is that postulation may be used in an arbitrary sense as well. However, pragmatic theorists have argued that since human dignity is a relatively self-evident postulation, it can serve as a guide to the teaching and the generation of knowledge in higher education circles. By making the postulate explicit, the postulate may be subject to criticisms as part of rational debate. In the absence of compelling critiques, the human dignity value should continue to guide and direct the future of higher education in terms of shared enlightenment, teaching, research and responsibility. If we assume that shared enlightenment is an aspect of the human dignity general principle, we are still challenged to delineate what it specifically means as a contextual reality in the context of higher education.

4. Shared Enlightenment and the Future of Higher Education

Since shared enlightenment is a component of the social process, it will be very important to know the specific context of conditions and factors within which the problems and the potentialities of shared enlightenment occur. To contextualize this process requires an identification of the critical dimensions of contextual reality in the context of higher education. What follows is a brief summary:

- Contextual reality related to shared enlightenment must identify the participators and are challenged to determine the level of inclusivity of **participation**.

Perspectives of Subjectivity

- Shared enlightenment will affect the process of thinking of the participators in higher education. It will specifically affect the processes implicated in the processes of identity. Identity may indeed be broadened and become more inclusive. It will also impact upon the perspective of value demand of the student, and in a sense, sharpen and accentuate claims for value in society. Finally, shared enlightenment will have an effect on perspectives of expectation and change of those who participate in higher education. Shared enlightenment may have profound effects on human subjectivity of participators in the future of higher education.
- Participation happens in **situations** and these situations may be brick and mortar or virtual. Situations may be vital to a realistic understanding of realizing the goal of inclusive participation.
- Enlightenment may serve as a **basis of power** to increase the shared level of enlightenment. Enlightenment in scientific research and other technological developments may significantly increase the influence of the institutions of enlightenment. Indeed, specialized knowledge, access to grants, review of new knowledge are all laced with issues of enlightenment as a base of power.
- The fundamental issue of **strategies** is that enlightenment favors strategies that promote the growth and dissemination of knowledge.
- The **outcomes** of shared enlightenment in general favor the accumulation, storage and retrieval of valid information. The enlightenment preference favors inquiry into fundamental knowledge of man and nature and a complete exploration of the creative potentials of the human person.

5. Specification of Values

I. This facilitates a clarification of the general context of deferred value.

II. The next task is the specification of the values implicated in the human dignity principle. From a scientific point of view, specification of values involves a synthesis of definitional or syntactic specification as well as an exercise in semantic specification.

In this paper we do not stress semantics and syntactics in the specification of values because there is a long tradition of this as a conventional approach to the problem in both religion and philosophy. Syntactics and semantics implicate a method or exposition that has been described as derivation. To a large extent, derivation has a starting point in the existence of a god or some other transempirical source. The traditions include Confucianism, Buddhism, Catholicism, Calvinism, German Idealism and Dialectical Materialism.

6. The Rise of the Individual, Human Rights & Higher Education Values

The role of the individual as a transformative agent in society and the demand by individuals are essential to the development of human rights. It is suggested that human

rights emerge out of struggle in social process at all levels. That struggle is the struggle for the recognition of basic rights and essential dignity. Additionally, an essential linkage is made between rights and opportunities, and insists that values require processes to secure the satisfaction of human wants and needs.

"At the root of the multiple crises confronting humanity today is a crisis of values that must be resolved before there can be any hope of lasting solutions to the problems facing humanity."

The founding of the World Academy of Art & Science was inspired by a conviction that knowledge and technology alone are an insufficient basis for human development, unless guided by and subordinated to the pursuit of universal values inclusive of all humanity. The founders were cognizant of the challenges of complexity and interdependence consequent on the increasing flow of goods, services and people resulting from rapid globalization. They recognized that rapid social evolution was undermining traditional notions of sovereignty, giving rise to new conceptions of global responsibility and human rights. Concerned about the social consequences and policy implications of these radical changes, they searched for new principles of global governance based on the common interests and rights of all humanity.

The current crises confronting humanity today reinforce the importance of global values as the essential basis for global social progress. Unregulated markets that serve the few at the expense of the many, undemocratic institutions of global governance, rising levels of inequality, unsustainable exploitation and destruction of our natural resource base, rising alienation of human capital from productive employment and rising levels of social instability are signs of a social fabric increasingly divorced from and insensitive to the welfare and well-being of large sections of humanity. At the root of the multiple crises confronting humanity today is a crisis of values that must be resolved before there can be any hope of lasting solutions to the problems facing humanity.

Concurrently, we are compelled to recognize the enormous progress humanity has made over the past few centuries in enhancing the values by which we live—the unprecedented freedom consequent of the expansion of democratic forms of governance, the unprecedented security resulting from rising levels of economic development, the greater recognition and enforcement of human rights, the gradual emergence of principles of a global rule of law and justice governing relations between nations and global society, which until recently dominated almost exclusively by power of politics and military power. Each of these changes is partial and certainly incomplete, but the direction is evident and the will for progress is still growing. Thus, we must reconcile our growing sense of dissatisfaction with the absence of values with a perception of their increasing importance. Jasjit Singh attributed this paradox to the fact that aspirations and expectations are rising faster than ground level social realities.[8] The concern for global values, their meaning, and salience have also been a concern for the Club of Rome (CoR). The Club's own interests in rational global economic policy and

practice in the common interest represents a challenge to better understand what the common interest actually is and what it implicates. Both WAAS and CoR have felt a compelling need for a deeper and wider trans-disciplinary inquiry into fundamental questions relating to the values in the global system. Such an inquiry is essential for understanding the present state of the world order to which we have arrived as well as for charting a better collective future for humanity based on universal values for sustaining a world order in the common interest. Over the past two years, the World Academy and the Club of Rome have been exploring the root causes of the crises facing humanity relating to the international financial crisis, unemployment, growing inequality, ecological destruction, global governance, international security and social stability. It soon became evident that the problems we face are rooted in the ideas and values that underpin the current global system and the effective lasting solutions to these problems will require fundamental changes in the normative foundations of global society in the 21st century. In order to validate this premise, the Club of Rome convened an eclectic group of 18 individuals from diverse cultural, intellectual and moral frameworks to participate in a two-day workshop in Bristol, UK. The meeting was conducted in association with the Alliance of Religions and Conservation (ARC) to reflect on the impact of myth, narrative, and values on social evolution and to provide insights into the values needed by the global community to support constructive development of all humanity in an increasingly cross-cultural, value pluralistic world. The group included four Fellows of the Academy, including the lead author. Following two days of very stimulating creative discussion, participants were requested to submit answers to the following questions summarizing their insights into the role of values and narrative in the past, present and future development of global society.

1. What are the key stories that have brought us to where we are culturally today and, which have been creative and which problematic?
2. What do you see as being the key values that could shape the future and where would they come from?
3. Which value, e.g. Liberty; equality; compassion—is the crucial one for you? Could you do a brief piece on both why and also on how it has changed its meaning in the last couple of hundred years?
4. Going back to your roots, what were the key stories and values that shaped you? How have these changed and how have they, and do they, shape the present?

These questions produced a number of wide-ranging responses reflecting the professional and cultural diversification of the group. Since the World Academy currently has a major emphasis on Individuality, our initial contribution provided a perspective of the Academy, which focused on the evolution of individuality and its implications for values fundamental to the global social process. We summarize the central points from the responses that was submitted by Jacobs and Nagan stressing the evolution of a narrative of individuality from a global perspective. In this regard, they suggested that the present is on a trajectory launched far in the past and moving well into the future. To know where we are going, we must first understand where we have come from and how we have arrived at the present. Viewing the past few centuries in the light of four value-based narratives offers important insights regarding humanity's recent achievements, current problems and future challenges.

7. The Individual and Contemporary Conceptions of Human Rights and Human Justice

"The individual, in taking responsibility for a successful life, is essentially a transformative agent in the social process.."

The role of the individual in the theory of human rights and justice is reflected in the recent work of Ronald Dworkin.[9] Dworkin starts with the relationship of ethics and morality to individual action and responsibility. The ethical question for the individual is "what does it take for a life to go well?" This ethical principle is a focus on the nature of self-respect. Self-respect requires that the individual takes his own life seriously and appreciates that it is ethically important to make one's life a successful experience rather than a wasted opportunity. This principle therefore reinforces the individual responsibility for self-respect and authenticity. The individual must be self-aware of the ethical responsibility to identify what counts in life as a success. The moral principle, which is derived from this, and which has global implications, is, if my ethical principle of self-respect is important to a life that it is not a wasted opportunity, then that is a principle that I can support with regard to all non-self others on the planet; in short, a principle of morality and justice for all of humanity. Both of these theories of justice root the essential dynamism of it in the individual as a starting point. There is a recognition, therefore, that the individual, in taking responsibility for a successful life, is essentially a transformative agent in the social process. For Sen, individuals have capabilities which they should recognize and the need for the demand for opportunity to fulfill those capabilities. Dworkin frames the issue slightly differently but in a way that is not incompatible with Sen. According to Dworkin, "we need a statement of what we should take our personal goals to be that fits with and justifies our sense of what obligations and duties and responsibilities we have to others…" Dworkin also requires capability and process freedoms, if life is not to be a 'wasted opportunity.' There is a genius in joining opportunity and capability with a responsibility to take one's life seriously as an aspect of both personal and community morality. The idea that each individual has a right to a life of self-respect and authenticity—which must be given operational effect by capability and opportunity freedoms—moves from that of an ethical commitment to that of a moral principle, in the sense that self-respect, authenticity, capability and opportunity freedoms are encapsulated in the universal principle of human dignity. Dynamism is rooted in the responsibility and obligation of the person to respect oneself. Such respect is sustained by the idea that the self is truthful to the self and, therefore, expresses to the self its self-validating authenticity. This means that the subjects of the idea of justice are meant to be active participants in the shaping and sharing of justice, and, moreover, to be active participants in the transformational dynamics of the principle of justice.[10] These views about the essential relationship between human rights values and the idea of justice effectually require the individual human being to be a subject of justice and a stakeholder in the promotion of the idea of justice implied in the fundamental human rights values. These insights are important matters for any discussion of the future of higher education and the values that it ought to promote and defend.

8. The International Bill of Rights: Global Values and Higher Education

1. Broad agreement exists about production and distribution of the core values in the UDHR and these values implicate both individuals and aggregates.
2. The values in the human rights framework cover both the so-called "negative" rights that purport to limit the abuse of power and the "affirmative" rights that implicate more directly the guidelines of responsible social change. Expectations in this latter category are styled "aspirational" rights.
3. While the word "universal" in the UDHR cannot be taken too literally, the nature of the rights in the Declaration has a more generalized character, a kind of "practical" universality.
4. The operative sphere of human rights is the socio-political conditions of interdependence and inter-determination. This means that rights are frequently "absolute," when they are contextually prescribed and applied. A cruder version of this point is the simple dictum that A's right or entitlement ends where B's like right or entitlement begins.
5. Human rights frequently give empirical specification to basic or fundamental interests. The approach to value clarification that we have outlined above may be usefully compared to the UDHR. The UDHR has been said to encapsulate three distinct generations of human rights: "first generation" civil and political rights; "second generation" economic, cultural, and social rights; and "third generation" solidarity rights. This common approach is stated in general terms. Since the rights are interdependent, this is not an approach which we value; nevertheless, the approach is conventional wisdom. First generation rights are represented in Articles 2-21; second generation rights are represented in Articles 22-27; and the third generation of solidarity rights are said to be represented in Article 28.

The second generation rights are the ones most controversial to constitution-makers, and the solidarity rights, with their transnational internationalist implications, may also be seen as far afield from conventional frames of constitutional law discourse. The rights expressed in Article 28, viz that "everyone is entitled to a social and international order in which the rights set forth in this Declaration can be fully realized" have been developed in various international law influencing fora to refer to a more equitable distribution of global resources, the right of all nations to political, economic, social, and cultural self-determination, and "the right to economic and social development." Additionally, the right to a viable eco-system, the right to peace, and the right to humanitarian aid during emergencies also are reflected in Article 28's mandate. This bare outline of the fundamental values attending the contemporary conception of human rights obscures a great deal of complexity, historical understanding, the pervasive and critical importance of normative insight in human experience, as well as the impact of science and change upon the human prospect. In short, human rights may have been influenced by trans-empirical or spiritual values, but their modern genesis is rooted in human experience. The human rights codes are actually given life and dynamism by the human element. We may describe this element as the element of dynamic humanism. The human element in dynamic humanism is the element of individual and associational choice. In short, human rights, as an aspect of dynamic humanism, are given momentum and relevance by

the processes of human decision making. To illustrate this point with a specific example we may refer to the Polish Lawyer, Rafael Lemkin. Lemkin had an intelligence predicate for the scope of the Nazi atrocities and proceeded to dedicate himself to the creation of a universal crime of genocide. The term 'genocide' is a neologism which he coined. However, the process of getting an international agreement on the idea of a universal crime for a major human rights violation encountered considerable resistance. It is possible that the leaders of sovereign states understood that the defendants in such a situation would be the state decision makers themselves. In any event, Lemkin's tenacity in pursuing the creation of the international crime of genocide is an inspiring example of the success of individual activism in the success generated by the adoption of the Convention that outlaws genocide. Indeed, I do not believe that we would have had the universal, international crime of genocide without the humanistic advocacy of Lemkin. Additionally, the seeds that would ultimately emerge from this initiative may well be the inspiration for the creation of the International Criminal Court. Today, we have countless illustrations of organizations which mobilized ordinary citizens' concern, activism and the corresponding influences on decision making with regard to human rights issues in all parts of the planet. For example, recent studies have shown that the global anti-apartheid movement was largely inspired by ordinary people's activism which in turn forced their governments to take stronger action against the apartheid state and which was a significant factor in the transformation of that country into a new political order. Similarly, tremendous indecision in the international community regarding the scale of atrocities of the conflict in South East Europe also generated citizen advocacy to reshape the dynamics of international intervention in that region. More than that, it was again citizen advocacy that led to the creation of the ad hoc tribunals for former Yugoslavia and Rwanda. Today, civil society, human rights organizations operate with global reach and are one of the most important sources of human rights intelligence. These organizations, directly or indirectly, train citizen investigators, citizen reporters, citizen advocates and citizens as human rights transformational agents. Moreover, such organizations have been skilled in utilizing modern technologies to strengthen global human rights mobilization. For example, Amnesty International has a sophisticated urgent action network, which permits it to have instant communication with thousands of members who focus on urgent human rights actions. This can be expeditiously done because of the speed with which a crisis can be communicated worldwide and generate an equally expeditious response.

9. Human Rights: The Social & Psychological Sciences & the Specification of Basic Values of Importance to the Future of Higher Education

Values today generate a discourse that is at times intellectually confusing, and critics might even suggest that they generate incoherence. It is therefore important to get to the basics of what we mean by social process, the role of values and social process and the challenge to social process of creating a constructive public order significantly influenced by the process of shared enlightenment generated from the processes of higher education.

Early in the last century the great anthropologist Bronisław Malinowski conducted observer participant studies in islands in the Pacific. Among his publications was a famous book *Crime and Custom in a Savage Society*. What Malinowski identified in terms of operational rules and customs in the community was the linkage of these rules and customs to the existential needs of community member participants. Later, the British anthropologist,

Radcliffe Brown connected the notion of community needs to community institutions, that with whatever efficacy were specialized to realizing these needs. After the war, Lasswell and his associates began to re-conceptualize the notion of needs in terms of values that human beings sought in their social interaction in community with other human beings. Thus, they merged the idea that social process comprises human beings in pursuit of desired values in the community for the satisfaction of human needs and human aspirations. The critical task of the social scientists was the identification of values, the identification of institutions and to determine how well or poorly values were secured and distributed in the community. With the publication and adoption of the Universal Declaration of Human Rights, value analysis became much more explicit and identifiable as correspondingly with institutions specialized to the securing, realizing and distribution of the basic values in any social process. The breakthrough for social theory emerged with an elegant description of social process, almost the equivalent of Einstein's $E=MC^2$. Social process is a process of social interaction between human beings and community. This process of interaction involves human beings seeking to secure basic values, through institutions based on resources. The human personality is thus a demander of values, and an activist in pursuit of values. This places the human being and human subjectivities and perspectives at the center of the social process, be it local or global. To complement these insights the psychologist Maslow created a hierarchy of human needs:

1. Physiological – hunger, thirst, bodily comforts, warmth
2. Safety/Security – out of danger, order, law, stability
3. Belongingness and love – affiliate with others, be accepted
4. Esteem – to achieve, be competent, gain approval and recognition
5. Self-Actualization – realizing personal potential, self-fulfillment, seeking personal growth and peak experiences

10. Values and Social Process

The central importance of values to policy-making is highlighted by a perspective which recognizes values as an essential element in an integrated social process, as described by Lasswell and McDougal. To give values a foundation of social realism, we may describe the Global Social Process as comprising the following:

Social Process = People + Values + Institutions + Resources

Lasswell postulated eight fundamental values driving the social process:

1. Power – The making of decisions enforceable by severe deprivations or high indulgences; making and influencing community decisions.
2. Enlightenment – gathering, processing and disseminating information and knowledge.
3. Respect – Freedom of choice, equality and recognition.
4. Well-Being – Safety, health and comfort.
5. Wealth – Production, distribution and consumption of goods and services; control of resources.
6. Skill – Acquisition and exercise of capabilities in vocations, professions, and the arts.

7. Affection – Intimacy, friendship, loyalty, positive sentiments.
8. Rectitude – Participation in forming and applying norms of responsible conduct.

The above approach may have some value for this discourse because it comes in a form directly related to the policy-making arenas of concern to the World Academy of Art and Science and the Club of Rome. The approach outlined above provides us with eight value categories and provides us with a marker, which targets the institutions that control and regulate the production and distribution of these values. It has an added element, namely, that rather than isolating economics from society and social realism, it shows that economics can influence every other value, and every other value may have an influence on economics. That is an important insight for the CoR. Second, the values identified here are the values that had emerged from the secular give and take of global politics. These values have extraordinary traction, although in the area of economics this has not been widely recognized in recent decades due to the strenuous but failed attempt of neoliberal economics to mimic the objectivity of natural sciences. According to this perspective, human beings do not invent values; we simply present the formula or the relevant myth and the accompanying narrative relevant to our time. The importance of the categories of values is their clear connection to identifiable institutions whose efficacy may well be questionable at this time. This approach provides a pointer to focus on critical inquiry into institutions crucial to human progress, and with a possibility of recommending reform or improvement.

We now extrapolate on the value scheme implicated in human rights and of vital importance to higher education. In this we should recognize that shared educational and enlightenment values, which are at the heart of higher education are one of the most important bases of power for bringing science, reason, wisdom and deep understanding to the political culture of any community. The following is the current value scheme:

1. **The value of life**: This is a centrally valued human subjectivity. It is referred to not in the "pro-life" sense (that a pregnant woman must bear a child), but in the Bill of Rights sense (that a person has right to personhood and autonomy). The value of life, therefore, includes the respect and deference given to the individual in the global community.

2. The status of the value of **power and security**: Should it be narrowly or widely shared? Is the common interest of all honored in a system that seeks to secure the widest possible participation in all key areas of the power process? One of the central values identified in the Atlantic Charter was the freedom from fear. This concern for freedom has evolved so that today no one denies that there is a critical interdependence between the concept of peace as a human right and all the other values in the UDHR. Peace and security might well be included under the functional category of power. However, peace is recognized as a complex peremptory component of the human rights value system. It is of value to again recognize that there are complex ways in which all human rights values have an influence on peace and security, recognizing as well that peace and security at all levels are critical conditions for the effective mobilization of human rights values. A central aspect of the values of peace and security relates to the connection between the mobilizing force of strategy for the realization of human rights goals and the realization of these goals themselves. For example, is it appropriate to deploy violent strategies

of action to achieve human rights objectives? Is it appropriate to disengage the value discourse involving strategy and struggle on the one hand and idealistic value objectives on the other hand? Gandhi, for one, insisted that the morality of struggle was even more important than the morality of distant idealistic objectives. Indeed, he also insisted that a disconnect between struggle, strategy, and goals was morally indefensible.

3. The **status and value of economic and wealth processes**: Is the common interest of all better secured by optimizing the capacity to produce and distribute wealth or the opposite?
4. The status and value of **respect and equalitarian values**: Should invidious discrimination be fully prohibited (covering all areas of race, gender, alienage, etc.)? Can equality be meaningful if it is only a formal, juridical idea without regard to the legacy of exploitation, repression, and discrimination?
5. The status and value of **educational and enlightened values**: Should these values be widely produced and distributed or narrowly experienced?
6. The status and value of **skill and labor values**: The centrality of labor and skills values to the human condition indicates that these are central and fundamental values implicated in the rights and expectations of those who seek to create and sustain these rights and labor values. Should these rights and expectations be widely shaped or narrowly shared?
7. The status and value of **health and well-being values**: The delivery of reasonably formulated and accessible healthcare and social services to all is now widely regarded as crucial entitlements, if the most basic standards of decency in politics and society are valued. Today, unemployment aid, social security, medicare, and other social services are considered crucial to a society that cares for its people.
8. The status and value of the **family and other affective values**: Because the family is the basis of collective existence and is central to the human rights of children, the public policies of a society that destroys family (and other affective ties) pose a problem for the wide generation of affective values including the loyalty values of patriotic deference.
9. The status and **value of moral experience and rectitude:** A system that endorses the centrality of moral experience to the legal and political culture and seeks to maximize the spiritual freedom of all is yet another of the central themes of the human rights perspective.

   How do we translate expectations of care or fundamental moral experience into the practical prescription of law and policy?
10. The status and **value of cultural and aesthetic experience**: The term 'cultural' includes the concept of the aesthetic. In fact, the word "cultural" could encompass all the value preferences that we might extract from the UDHR. There is, however, a narrower meaning that the term culture might carry. That meaning ties in with the notion of human rights as also emblematic of the diversity of human experience, experience that reflects the cultural richness of humanity as a global community. There is great controversy about the issue of culture and tradition, culture and creativity of the present, culture and the elaboration of the aesthetic, which may capture and nurture the cultural

narrative of creativity and beauty which may in fact be the critical psychological view of how the glue of social solidarity promotes creativity. The boundaries of this discourse are controversial. Sensitive matters of sexual regulation which may differ widely may be justified by culture and yet here the culture of tradition may not be compatible with the culture and creativity of the present or the future in human rights terms. For example, female genital mutilation justified by cultural tradition is not justified by either religion or by the science of human sexuality. Human rights thus provide a process by which these boundaries may be appropriately protected and expanded according to the normative challenges of human dignity. The current discourse often suggests that universality trumps cultural relativity or vice versa. This is not necessarily helpful unless one sees these ideas as only the starting point for value clarification and application from a human rights perspective.

11. The status and **value of the eco-system**: Today, we recognize a complex right to a viable eco-system on what theorists have seen as Spaceship Earth. The values embedded in the protection and promotion of a healthy eco-system, are, like many other values, issues of complex inter-dependence and inter-determination. However, implicit at least, in the concern for the integrity of the eco-system is clearly the notion that there are no human rights if there is no environment in which human beings can survive and possibly even improve the human prospect. But this insight suggests an even higher level of moral consciousness in the sense that the eco-system (with its plant life and animals, wild and domesticated) is part of a complex cycle, in which human beings are both custodians and also utterly dependent as individuals and as society. This means that we now see in nature not something irresponsibly exploited and destroyed but central to our identity as a sentient species. To take a simple example, for all the vaunted technology of human progress and human egotism, no one has seen a dog or a cat or a rat or indeed the most elemental of recognizable life forms outside of this lonely and unremarkable planet called Earth. Thus, as humanity, we now look at life even in its most humble forms as not only indispensable to the interconnected chain of life on this planet but we see in it something new and utterly connected to the very consciousness of being human and being alive. In short, we know that our dogs identify with us. We may now know those ordinary pets in terms of how they and all other living forms have shaped our identity both psychologically and physiologically.

11. Human Rights Values as a Dynamic Humanistic Challenge for Dignity in the Future of Higher Education

In setting out the issues and problems that limit the scope of contributions that academics can make to the human rights agenda, the core ingredients of a solution to the dilemma can be identified. The solution requires a theory for inquiry about human rights. The theory must have a decision-making focus to have practical relevance, since only effective decision making—formal or informal—will apply human rights perspectives and operations to particular situations and contribute to a human rights-conditioned future.

A theory about human rights, that is policy decision-focused, must self-consciously concern itself with the policy process itself by integrating actual human rights problems that require

policy responses; both the problems and the decisional responses to them must occur in a disciplined contextual setting and the decisional responses must employ processes that meaningfully clarify the policy basis of human rights prescriptions. Theoretical inquiry about this kind of emphasis must embrace cross-disciplinary tools of inquiry, or multiple methods, to give scientific credibility to the enterprise. This requires fidelity to at least four essential features of a theory about human rights inquiry from a humanistic policy perspective.

1. **Comprehensive Mapping**: Fundamental to an inquiry is the expression of a comprehensive map of value problems specified in terms of functional value categories and which permit continuing refinement and elaboration. A systematic expression of these problems will underline the difference between value deprivation and human rights realization. The lexical formulation of human rights as rights is frequently the tail end of a process that needs illumination.

2. **Relevance of Context**: Factual, theoretical, historical, and political contextual relevance must drive the theory. All human rights, in the sense of process, must be seen in relation to every relevant community context, from local to global.

3. **Relevance of Advocacy, Policy and Decision**: These are matters alien to academic culture. The focus on policy and decision requires the identification of past, present, and future decisional mechanisms at every level of community that may be relevant in clarifying, specifying, protecting, and enhancing human rights. We should of course keep in mind that policy and decision do not function in a vacuum. Frequently what triggers a policy response is a problem that emerges from the social process context. That problem will emerge in the form of a dynamic humanistic claim for a human rights value and an aspect of social process that will respond by resisting that claim. Therefore, the quality and sustainability of interest articulation and advocacy will be an important foundation for a response that is authoritative and controlling to the problem that is eventually presented for decision. These areas are crucial to the responsible exercise of higher education tasks.

4. **Relevance of Key Intellectual Tasks for Inquiry**: The relevance of the identification and use of appropriate intellectual tools is necessary to clarify the rational, theoretical and factual basis of the context of human rights, as well as the procedures for their realization in fact. The key discrete intellectual tasks are: goal and value clarification; the historic study of relevant trends; the scientific study of causes and consequences of human rights failures or successes; the concern for predicting possible future scenarios in terms of approximation to desired human rights goals; and the creation of alternatives to better approximate the desired human rights goals.

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Towards a Society of Living:
Provocations on Economy and Economics by a Layman and Entrepreneur*

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Abstract

This contribution explores the shortcomings of our current understanding of economy and economics, and how the incumbent framework of interpretation relates to structural failures which are all too obvious since the crisis of 2008. It proposes a reformulation to frame the economy as part of a larger, complex system of systems which is the planetary society at large. It points as well to social blind spots which have driven us into the accelerated gridlocks in which we live, and suggests some ideas to illuminate potential pathways for the evolution of human societies, in order to get out of the present bifurcation towards desirable futures.

> *"The welfare of a nation can scarcely be inferred from a measurement of national income as defined by the Gross Domestic Product (GDP)."*
>
> **Simon S. Kuznets (1901-1985)**

> *"Only economists still put the cart before the horse by claiming that the growing turmoil of mankind can be eliminated if prices are right. The truth is that only if our values are right will prices also be so."*
>
> **Nicholas Georgescu-Roegen (1906-1994)**

> *"No problem can be solved from the same level of consciousness that created it."*
>
> **Albert Einstein (1879-1955)**

1. Introduction: The Vanishing Point

Our global economic system is truly dysfunctional. It plunders non-renewable resources and destabilizes our natural environment on a massive scale, in a spasmodic process of wealth creation and destruction which also produces unemployment, low-paid labour and growing social inequalities. And in doing so it ignores the intricate nature of our relationship to life, and leaves anyway unattended so many human needs, while exciting the bulimia of others, that large-scale poverty is persistent and so many riches of human potential are neglected. Yes, the outcomes may look different if high rates of GDP growth are achieved, but for the time being this is not feasible without more environmental degradation and an explosion of

* Disclaimer: Although based in much reading and reflection, this paper does not pretend to be an academic contribution to economics, but rather to feed the ongoing public debate. It tries a daring intellectual journey far from usual views on economy and economics (and definitely far from orthodox neo-classical economics), and it probably raises more questions than it answers. But this is consistent with its actual intention to ask provocative questions as first steps for further research.

financial debt which consumes the least renewable of all resoures, our own future. Of course, this system has also winners, a few of them very powerful, and many more who aspire to win, but is that enough to keep it as it is? Is it enough to avoid complete collapse?

So, the main point should be how to fix the system. This is where mainstream thinking is, trying to find out how to come back to "business as usual", a time before the crisis of 2008 when we thought the system was working well. But as we will see in Section 1, the failures are structural, not temporary: in a process originated decades before 2008, the system is threatening its own foundations without achieving purposes which would make human and natural sense.

So, if we are not able to fix it just by repairing faulty pieces and changing control parameters, maybe the point would be to rely on exogenous factors to do the job, and in particular on scientific discoveries and technological innovation. This is also where the mainstream thinking is, hoping that technology could create a substantial change, especially to mitigate the environmental impacts of our development. But as we will see in Section 2, science and technology are not doing that, because their potential is wrongly directed to reinforce the same structural failures.

So, if the kind of innovation we have will not do the job, maybe the point is to produce a real transformation of the whole system. And of course it is, but as we will see in Section 3 that the system is transforming itself everyday, and while we have expressed pretty well the goals which would make human and environmental sense, the efforts in that direction are hindered by the irrelevance of our tools as they exist today, and a gridlock of purposes which all in all create a gigantic gap between our well-intentioned rhetoric and our actions.

So, if we are not able to transform the transformation (and right now we are not), may be the point would be to review the grounding concepts themselves, how we think about the system and its purposes, to check if the assumptions we make and the perspectives we take to conceive its multi-scale arrangement, from local to global, are not too simplistic and inappropriate. And of course we need a whole restatement, but as we will see in Section 4, by doing that we will realize the limitations of our conceptual frameworks, how wrong is our mechanistic model of the economy as something separate from society and nature, and the blindness of using that perspective to describe processes which are of a higher order of complexity.

So, if our epistemological approach to the economy is wrong, maybe the point is to understand why, and not only by looking for the obvious suspects, those vested interests are making huge profits from the current state of affairs and preventing a meaningful transformation. This would explain the political *status quo*, a true gridlock of will, but not why we do not find ways out of it. To understand this, as we will see in Section 5, we should have a look into our deeper fears and the blind spots they create, which govern our everyday life and the way we conceive society, in conscious as well as unconscious thinking and feelings.

So, if analyzing the state of the economy and its potential for transformation brings us to the blind spots of our consciousness, to the complexity of human perception and its consequences, maybe the point is about the evolution of human life itself and maybe it does not apply only to the economy but to Earth society at large. Yes, in our view this is the ultimate point, so obvious that it vanishes, and so complex that we are not (and possibly never

will be) even close to understanding it except in fragmented ways, through intuition and experimentation. In Section 6 we dare to propose ideas which could be useful in exploring issues relevant to define another type of economy. Have we created a society of living? Do we create more life than we destroy? Are we **in a logic of dying or in a logic of living**? Do we know that at the level of complexity of societal life, ontology (what things are), epistemology (how we understand them) and ethics (how they should be) are inevitably entangled? Do we understand that there is no difference between living and learning? Are we not committing suicide of the human species, at the same time that we destroy many others? In the end, are bacteria more resilient and therefore more intelligent than humans?

2. Structural Failures

What happened to the world since 2008 (and is in no way finished) has been widely described as a **global systemic crisis**, but strangely enough it has not deeply changed the framing of economy and finance generally accepted by the Western elites. The crisis is global in its geographical impact since very few people on Earth, if any, have been unaffected, but it also spans over multiple facets of social and economic life: of course finance and consumption, but also the provision of energy, food and raw materials, the challenges of environmental degradation and climate change and, not least, the balances and tensions of geopolitics, the never distant issue of war and peace.

What does "systemic" mean in this context? In our view it means that the structural principles of the current "world system" have failed and will not come back to what they were supposed to be before the crisis. For one, **governance is dysfunctional** in many scales and contexts. By committing deliberate suicide in the Western countries in the 1980s, politics downgraded itself to be subsidiary of so-called free-market economics, mass consumerism and technological innovation. The view is persistent that the political system could be at best an auxiliary to economic growth, ensuring stability through redistributive policies, and at worst an ill-intentioned or clumsy agent whose interventions could only make things harder for everybody. Since this view won dominance in parallel with economic globalization (not a coincidence), a huge transfer of power happened from politics to other areas, most notably to finance and corporate business, but also to nowhere: the deliberate decline in the institutions of global governance also indicates that in many aspects of concern the capacity to take and enforce political decisions now simply does not exist or must be improvised case by case through huge efforts of inter-governmental coordination.

But of course governance is still much needed, so that the state had to rescue the financial disaster of 2008 through massive injections of public resources into the banks "too big to fail", in exchange of vague promises of wiser behaviour in the future. After decades of deregulation to set markets free of political intervention, politicians were called back and are now blamed for the outcomes, since to the eyes of many we already live in plutocracy and politicians proved to be closer to the interests of big business than to ordinary people. Profound as the crisis is and will be, it is having a huge impact on the political *status quo* and the future of democracy (Ali 2015, Hertz 2001).

Moreover, politics came back but **it still has to show a roadmap** to offer new and hopeful visions for the future, which cannot be those of never-ending sacrifices for the sake of "financial stability", i.e. to ensure that a "rentier imperative" is respected. In the context of

western democracies, this dilemma of politics becomes particularly acute. Some members of the elite seven start to think that authoritarian ruling (f.i. in Chinese style) is more effective than truly democratic regimes.

The lack of governance is also due to the **changing structure of globalization**, which started with an asymmetry all to the benefit of the Western world (especially of the "Anglosphere") but has evolved so much in the short time of a human generation. Now we know that wealth, power and influence can move long distances fast. The huge deficits which pumped growth in Western countries, most notably in the USA, were made feasible for years by extraordinary surpluses of Asian and oil-rich countries. This could not come without a cost and so, a **gigantic shift of power** happened through the (re-)emergence of new global actors in the international scene which have their word to say on every aspect of globalization, and where by the way most of humans live, so this is nothing but justice.

Part of that process was due to the addiction of industrialized countries to oil, gas and other natural resources, quite dispersed around the world and whose economic and strategic value will do nothing but grow in the future (in spite of speculative oscillations). But the crucial and irreversible part of this shift is due to endogenous and multidimensional modernization patterns, including demographic transitions, extension of literacy and political self-assertion. Ultimately, the extension of the global networks of knowledge creation and diffusion will strengthen this trend towards a more equitable distribution of power throughout the world. From an Asian perspective this is not new but rather the re-emergence, at last, of the most ancient civilizations of China and India. As Chinese say, Beijing is the capital of China, but Shanghai dreams to be the capital of the world (or is it already?). Unfortunately, we westerners still think in very primitive terms of "Us" and "Them" and, worse, we take for granted that our power of the past, and still of today, gives us some kind of moral superiority. This makes it very difficult to pursue the real opportunities to build together the tools of global governance, precisely when challenges are getting more and more global and complex.

And among the challenges is the fact that many countries (15 to 20% of total world population, around 1 billion people) are still left behind, excluded from modernization benefits and prosperity. At the same time, universal literacy, women's emancipation and modern technologies are facilitating the emergence of a planetary interconnected citizenship which is redefining the nature of power itself (Naim 2013, Schell 2004). The paradox is that while traditional politics was committing suicide in the West by conceding more power to market owners and self-proclaimed experts, reality was actually becoming more and more political, as determined by non-trivial interactions between a greater number of autonomous actors. As the number of these and the connections between them grow dramatically, so do the **complexity and unpredictability of our human society**. This is not bad in itself, it may be instead the basement for the emergence of a new paradigm of civilization, but our tools of governance are not ready yet for that because our degree of consciousness is still way behind what is happening. In practical terms, this creates a **gridlock of will** which prevents the results of our actions, and the actions themselves, to be consistent with our discourse.

Also, the **lack of economic growth**, as measured in monetary terms, is threatening the whole building of the global economic system. While growth has been for decades the main purpose not only of business and economics but also of politics, and of course is still an

aspiration for a large part of the world population, it can no longer be taken for granted. On one side, we are realizing at last that a high and sustained level of growth was only made possible since the 1980s through financial illusions by pumping huge amounts of resources from the future into the present in the form of ever-growing debt, up to the point where the scheme was no longer sustainable and a catalyst (the "subprime" mortgages) put the whole system at risk. Actually, another big round of **burning out the future** has been performed by public intervention to prevent a complete collapse.

"The production of more inequality seems to be an intrinsic characteristic of our world system."

Also and most important in the medium to long term, we know that our consumerist society of uneconomic growth and waste, driven by the materialistic lifestyles of the leisure class, is incompatible with the renewal of resources made possible by the interaction between Earth and Sun. Without solving that contradiction, sooner or later the collapse of human civilizations is inevitable, as it was for the people of Easter Island, a small-scale but significant precedent. But we still stay in the **gridlock of metabolism**, ignoring the bad news that we have not only to increase efficiency in the use of resources but to decrease dramatically their total consumption (Reichel 2010), while finding a way to address human needs, but the real ones, not consumerist bulimia.

To put it simply, we have been consuming more time (in the form of financial debt) than we are able to produce and more material resources than the Earth is able to deliver in a safe way. This is no longer sustainable. No doubt, the pertinence of growth, or at least the type of growth we have been used to, is a crucial question for now and the future. This issue in itself would be enough to address a complete redesign of the economic system (Daly 2008, Jackson 2009).

Last but definitely not least, **inequality** between individuals, groups and nations has been rarely a matter of concern during recent decades. After the failure of "egalitarian" regimes, common thinking was that since growth was providing benefits to many, in a direct way or through redistributive policies, no particular emphasis should be put in monitoring inequalities, much less in reducing them. Actually, and for some time, the current world system reduced computable poverty (as measured by GDP per capita) in a massive way, especially in Asia, although it is certainly more the result of endogenous processes of modernization triggered by a virtuous triangle of political stability, investment in public goods and the reduction of illiteracy, rather than merely the consequence of globalization in investments and trade.

At the same time, inequality has grown in a very visible, often obscene way, when one compares the 1% of wealthiest people to the 50% of poorest, whether at national or global level. Instead of an undesired consequence of growth or (to be very optimistic) a transient phenomenon soon to become irrelevant through global development, the production of more inequality seems to be an intrinsic characteristic of our world system. Like in ancient aristocratic regimes, economic differences accumulate across generations, basically through a **rentier premium** to the benefit of those already wealthy (Piketty 2013). And this is not something of the past: in the "knowledge economy" successful innovations are characterized by monopolistic concentrations of wealth in the hands of lonely winners (e.g. Microsoft,

Google). Of course, part of the premium is the rampant tax evasion by rich individuals and corporations, helped by governments which are supposed to be democratic.

Till recently the promise of prosperity for all could ease the burden that growing inequalities put on the legitimacy of the system, which still tries to keep alive the dream of meritocracy to attract talented people and acquire legitimacy. But, once growth has been put in jeopardy, after public policies have reduced welfare benefits for the sake of "financial stability" and when massive unemployment and low-pay jobs are produced, inequalities of all kinds have become much more important in the minds of millions of world citizens, not only the poorest whose fate was already desperate but especially those fearful who are quickly losing standards of living taken for granted. Not least, the perception is now quite general in Western countries that living conditions will be worse for the next generations, that **progress and modernity are no longer connected**. Aware as citizens of the world are of their rights (even in countries without a formal democracy), this situation is an excellent recipe for resentment, upheavals and a **dramatic loss of legitimacy**. Of course, the top salaries in financial institutions saved by huge sacrifices in public budgets did nothing but fuel the resentment. This is certainly one of the reasons why elites live today in so much anxiety of coming back to "business as usual" as soon as possible, instead of taking the effort of rethinking substantially the systemic characteristics which led us to the present state.

In brief, fundamental principles of our current world economic system are failing, and in a permanent way. As described, the challenges are not a consequence of exogenous circumstances happening at a certain point in time and creating a transient crisis from which recovery can be envisioned, but rather a product of the system itself in the way it has been working for decades. In some sense, **our economy does not work well even when it works well**.

3. The Illusion of Technology

Technological innovation is the "deus ex machina" invoked to solve all challenges. In many senses we praise science and technology today as much as we revered ancient gods. We consider them to be the source of modern truth, since scientific knowledge is labelled with the prestige of objectivity and neutrality per se. And science and technology (S&T) feed our dreams since their secular success has made feasible many crazy wishes of human imagination, like flying, travelling to the outer space or chatting with other people wherever they are on the planet. Not least, precisely because of that success, we easily extrapolate the future of S&T to bring us omnipotence, an infinite capacity to break the physical limits which restrain us and, who knows, even that of time and death.

In other words, the wonders made possible by S&T in the last centuries are not enough, we add to them an extra layer of enthusiasm which goes much beyond their actual capacity. All the technological miracles we now take for granted have required huge efforts, a lot of patience, large investments over long periods and a good amount of serendipity. And, most important, they are based not on breaking the physical limits but on better understanding them and finding ways to build on our limitations: we do not fly by ourselves as birds, we mobilize our knowledge and resources to create artifacts which transport us in the air while still respecting physical laws. Of course this is an extraordinary achievement but it is bound by reality, something we easily forget.

Somehow we deal with the rationality of S&T in an irrational, almost religious way, which is nothing but the expression of our emotional nature. We are driven by a complex perception of reality and so many times by our fears, and we need some kind of belief. For three centuries the driving belief has been in the progress of humanity, of course reinforced by the success of S&T. But, while for generations born before the 1980s changing the world for the better would require also (or primarily) political and social innovations, now it seems that S&T has even displaced every other source of hope. The launching of the latest digital artifact creates a widespread frenziness, but also a true and exciting entrepreneurial spirit is mobilized by the potential of technologies to address human challenges. In a sense, we put **S&T at the core of societal evolution**, or to say the least we do not conceive any transformation without them playing a significant role, and this is also why we think they should rescue us from all disasters, even those provoked by ourselves.

This is ironical, since science and technology (S&T) have been not only central to the development model followed by human societies in the last few centuries but often (still today) very effective instruments of mass destruction, environmental degradation and social exclusion. **S&T have been definitely part of the problem**, a key component of our model of economic development, and not only an exogenous factor as considered by mainstream economics, which anyway recognizes their crucial role to improve productivity and sustain long-term growth. But they are also deemed to be the core of the solution, a paradoxical vision grounded in the mentioned beliefs, and in the idea that finding a technical fix is a good way to avoid the less comfortable question of how power and wealth are distributed in society and with what consequences.

Of course, the essential role of S&T cannot be denied. On the contrary, in their capacity to shape human perceptions their role is even greater than their actual abilities to change our relationship to nature. But are not we being unrealistic in expecting them to solve every relevant challenge? Coming back to the structural failures mentioned in Section 1, first S&T will not solve by themselves the challenge of governance. Starting as usual with military power, the latest technologies have been used to redefine warfare in a double way: by limiting almost to zero the losses of tech-savvy armies (to conciliate public opinions in Western countries), and by pretending a high precision in killing only the "bad guys". But instead of deterrence of wars, the effect has been to relegitimate them after the fiasco of Vietnam (and actually that was the political intention). So, has this been good to build up a peaceful global governance or rather a sure bet for further violence and destabilization? Also, along with deep demographic trends like the progress of literacy and the change in status of women, S&T have contributed to make people more autonomous and more connected, and therefore to increase the complexity and uncertainty of our societies: now, everybody could be the initiator of a trend of worldwide impact, and we are getting farther and farther away from what could be a "controllable system" (Naim 2013). That could be good news, and in another boast of technnological optimism we could imagine that this would bring us to a new era of planetary "collective intelligence" (Attlee 2008, Rodriguez 2004, Sunstein 2008) but for the time being this is still just an aspiration and not an effective tool of governance.

Second, as mentioned, mainstream economics expects S&T to deliver "external" shocks in order to produce high growth rates which are needed to keep the system running, but is that what really happened in the last few decades? This is a controversial topic, and different types

of evidence could be found, but it seems pretty clear that S&T, and in particular information and communication technologies (ICT), have been central to the ultra-sophisticated financialization of the economy and the artificial, debt-driven growth model in which we have been living. Further progress in S&T is now subject to an **endless stream of speculative bubbles** on financial markets (Pérez 2002). Their logic is short-term obsession, to cash in now on future and fully uncertain realizations of innovative ideas, which is a good recipe for inflating an already huge amount of fictitious capital and actually preventing that enough investments are made at the right pace over enough time to ensure that the benefits of S&T are reaped for the common good. S&T could be part of a sustainable model of development but not in the way their relationship with the economy works today.

Third, S&T will certainly be the fundamental tools needed to address the environmental challenges but today this is not what we are using them for, or only in a marginal way. Instead, they are used to produce a continuous flow of new and more things, in disregard of the many environmental threats this creates. And fourth, regarding social inequalities, the role of S&T is definitely ambiguous. Yes, the benefits of knowledge can be distributed evenly, but they can also be used to concentrate more power and wealth in few hands. This is what typically happens in activities with high network externalities, like software business or the commercial exploitation of telecommunications and the internet, and so are created private monopolies like Microsoft, Google or Facebook. And the disruptive power of digital technologies is often used as well to change the social fabric by pretending a capacity to reduce costs (*cf.* the illusion of "zero marginal costs") while they actually change the structure of prices, i.e. the distribution of power. So for instance taxi drivers, presented as if they were abusing of a monopolistic position, are in risk of dispossession by Uber, which intends to avoid the full costs of transport (including social charges and the fulfilment of public regulations) in order to create a new brand, not a publicly owned service but, this time for good, a private monopoly. Yes, the "sharing economy" could be real but as a mechanism to create capital accumulation in monopolistic hands, it is simply a false metaphor and a fraud.

All in all, increasing our knowledge and applying it into new artifacts have for sure a strong potential to benefit humankind, but the processes and rules through which scientific discoveries and technological innovations are promoted and produced are not neutral at all, but rather reflect a particular organization of society and therefore embody certain values and interests, explicit or not, which of course have a strong impact on the outcomes of S&T activities. It is legitimate to ask on which factors does it depend that S&T could contribute **to overcome or to aggravate the challenges** we face. Of course this question has much to do with the key players in the domains of scientific research and technological innovation. Under the dominant view of who should have the leading role in the evolution of society, we almost forgot that the state has been the most consistent player in research and innovation, with a unique capability to mobilize and orient public and private efforts through its multi-faceted capacities: as the no.1 client in every country and as such able to drive large-scale innovative demand, as the regulator pushing companies to invest heavily in R&D effort (f.i. in pharma and biotech sectors) and, not the least, as an entrepreneur able to bear the burden of uncertainty and long-term planning much better than private corporations (Mazzucato 2013). In the last decades we have been unlearning this historical experience and vision acquired in the second half of 20th century (Bush 1945) which was so successful in the USA and other countries to produce a long-term gigantic leap forward.

As a consequence of relying more and more on private initiatives, the agenda of S&T itself is deeply changed. While the public agendas of research and innovation include "societal challenges" as part of their targets (as f.i. in the Horizon 2020 programme of the European Union), most of the innovation really happening is driven not by the type of concerns exposed above, but by the existence or not of short-term profitable demand which businesses could exploit (as is coherent with their logic). And if the demand does not exist yet, it is created by bubbles of speculative investments and the pressure of fashion. Our culture praises innovation, a magic word omnipresent in our mass media, but it generally translates to a high-speed consumerist stream of instantly obsolete artifacts for which we put in danger the supply of rare earth minerals (Valero 2015) while it is the fuel of wars being fought in Africa. And on a larger scale, we consistently ignored over the last decades the opportunity to increase resource productivity (Weizsäcker 2010), because our policies ensured that wasting non-renewable resources imported from the other side of Earth makes more economic sense than using the potential of local labour.

In this context, a very specific role is being played by ICT, for most simply a synonym of "technology", the paradigm since the 1980s of technological innovation "changing the world". No doubt, their impact is huge, but do we fully understand it? And do we harness it for the common good? Nothing is less sure. The digital industry is brilliant in producing a succession of fast-moving **rhetoric waves** which are tuned to our most irrational beliefs in the omnipotence of S&T. For instance, intangibility and dematerialization are used as a call to get free from limits, as is implicit in terms like "zero cost" or the "cloud", while this is made of huge material infrastructures and, of course, we still are physical beings living in a physical (and finite) planet with physical costs. A different, real kind of dematerialization should certainly happen, enabling human development to be free from the accumulation of material artifacts, but this is not what the digital industry is doing.

Moreover, digital innovation is increasingly focused on the disposability of humans, on replacing them by automated machines, potentially threatening every single job on Earth, skilled or not, up to that of President of the USA for which the IBM Watson software has been proposed, and the campaign is not a joke. Even analysts of stock markets are at risk of being replaced by automated machines in the ultimate self-devouring pirouette of financial capitalism (Popper 2016), pointing to the true dystopia of a world owned by the happy few and operated by machines, while the 99% of us would have to struggle for the crumbs. Instead of falling into the messianic **illusion of "digital solutionism"**, we should pay serious attention to how it is practiced today and to its contingent nature (Lanier 2010, Morozov 2013), since it could pave the way to full dehumanization, "technolitarian" futures in which human and environmental purposes would be secondary to the logic of technological innovation. "Transhumanism" and the quest for "singularity" are examples of an arrogant techno-utopianism full of metaphoric promises which are just vaguely related (or not at all) to the challenges mentioned above and could instead aggravate the risks of collapse.

When facing this contradiction between the potential benefits of innovation for humanity and its practical outcomes, one cannot help remembering T.S. Eliot, as he asked almost a century ago where is the knowledge lost in so much information and, worse, where is the wisdom lost in so much knowledge. Drowned as we are by an endless deluge of gossip, our minds get lost in the "trending topics"of the day and thinking in perspective becomes

extremely difficult: if we connect to everyday reality we are not able to think; if we disconnect from it, will our thinking be valuable or even heard? Of course alternative thinking exists and is probably richer and stronger than ever but we do not pay much attention to it. We live in a constantly accelerated time (Rosa 2005) and we are not so interested in learning relevant knowledge when it is contrarian to the high-speed mainstream. Conversely, we are able to unlearn easily some wise lessons acquired at high cost in the past (f.i. that of a strong regulation of financial markets). And while the active participation of stakeholders (actually, the whole planet) would be key to reap the benefits of S&T for the common good in an "innovation democracy" (Stirling 2014), we look at what happens as if it was a show. Debord was right, we live in the "société du spectacle" and thus in a **gridlock of thinking**, in which our lives are entertained as much as to block genuine humanity (Postman 2005) and to avoid a real impact of modern art and creation on our conformist mass-media culture.

The combination of scientific knowledge and technological sharpness has a strong generative capacity, which could lead either to old-fashioned accumulation in very few hands or to the emergence of vibrant ecosystems for the benefit of sustainability and diversity of humankind. But right now innovation is obsessed with speculation, not driven by societal challenges, focused on "solutionism" rather than on specific contexts and produced without the stakeholders. So, we cannot take for granted that it will drive our course away from socio-ecological disasters. It could be (it is right now) the opposite. Overcoming this situation requires making explicit the processes, rules and motivations driving S&T as an expression of our social organization, and developing the appropriate criteria to assess the relevance of new inventions for the course of humanity.

4. The Lampedusian Syndrome

Then, the state of affairs described in Section 1 calls for some kind of radical transformation, a goal which is claimed by many although prescriptions vary greatly from one to another, and some even think that the right diagnostic is actually a lack of enough "free markets" and deregulation. But even if we assume that the economy has to be transformed, this statement is still pretty weak. Weak because the call for reforms or transformations is heard everyday in the public arena, but the purpose and details of what has to be transformed and in which direction are not so much discussed. So many times the implicit prescription is to better adapt to globalization, just as if it was a universal law of physics. But the statement is also weak because economy, society and life at large are always by themselves in a process of permanent change, of combined transformations happening simultaneously at different spaces and time scales, slow or fast, intentional or undesired. Our social systems are autopoietic; they are always recreating and transforming themselves (Maturana 1980). So, how to make the difference and ensure that the net result of all the transformations taking place, intentional or not, is going in the right direction? In other terms, how do we avoid the Lampedusian trap of changing everything in order to change nothing, how do we **transform the transformation**?

This raises the question of normative criteria, the question of what we mean by "the right direction". A minimal requirement would be structural stability, so that the system evolution should not create the conditions to destabilize and destroy itself (which is exactly what it is doing), but this certainly will not be enough. To be true, an optimistic vision of how the failures described in Section 1 have been treated in the public agendas since 2008

could provide some answers. To start with, the role of economic growth and its ambiguity are addressed in the document "Transforming our world: the 2030 Agenda" adopted by the United Nations in September 2015, and a detailed definition of "the right direction" is proposed in the statement of 17 Sustainable Development Goals (SDGs) and 169 associated targets. Moreover, the unanimous agreement at the COP21 conference on Climate Change in December 2015 shows the public concern of governments, corporations and society at large on the undesired consequences of the current economic development model.

Also, inequality has been addressed by many, in and out of the academic field, and Piketty even became a no. 1 best-seller on Amazon in April 2014. Again, the concerns about growing inequalities and poverty, and their implications in terms of social responsibility are present in the public discourse of governments and core institutions of the current economic system such as the OECD. The changes in the asymmetric structure of globalization are being (painfully) recognized as a fact of life, and a new way of dealing with multilateral negotiations may be emerging via the replacement of the G-8 group of rich countries by a much wider G-20 with a strong representation of so-called "emerging" economies. And the crucial role of politics is being re-emphasized in the European Union by parallel phenomena (although mainly divergent): new political actors have dramatically shaken the status quo in many countries (Greece, Portugal, Italy and Spain, to name a few) and the European establishment is making efforts to build a "stronger union".

But are these reactions to the challenges of the right ones, are they enough and are they happening at the right speed? And could we claim that the challenges are new to us, that we are reacting in time? What if we had a look back to the past to judge how good we have been in changing our course in the right direction? 50 years ago, Radovan Richta, a now forgotten philosopher from Prague, said that our civilization was at a crossroad (Richta 1966). Some years later, the Club of Rome proposed the concept of limits to growth in order to avoid collapse of civilization as we know it (Meadows 1972).These and many other works published in the 1960s and 1970s had a real impact on the public debate and fueled controversies with a potential to influence policy making, and in the last decades environmental concerns have certainly played a role in shaping the political agendas, both at the national and international levels. But in terms of civilizational changes, it seems fair to say that the outcomes have been quite limited, or not even that as far as sustainability is concerned.

Actually, new research is showing that the recent evolution of humankind has been close enough to the predictions for the "business as usual" scenario described by Meadows and her team back in 1972, which they interpreted as a sure path to collapse (Turner 2014).We did not hear the alarm, not that of 40 years ago, and not the previous ones: since Robert Malthus wrote "An Essay on the Principle of Population" back in 1798, dozens of thinkers and leaders have expressed deep concerns about the fate of humanity as a consequence of a socio-economic model based on the core assumption of unlimited growth. And we did not pay attention either to those practitioners who developed solutions which would be labelled today as "green", such as the solar machines created by Augustin Mouchot back in the 1860s, from which humanity could have profited to avoid the dependency on fossil fuels (Bonneuil 2013).

We humans live on perceptions, and we excel in denial, especially when the reality we have to face may have a negative impact on the way we live. This makes us prone to believing in story-telling, like the supposed recovery from the 2008 crisis which is part of the official

framing in Western countries, just to be denied by stubborn reality (Chang 2016). But what if the collapse anticipated by many as a threat for the future had already started? What if the Malthus curse, cited as the perfect counter-example of how civilization overcame fatalist visions of its future, was revealing to be true? Are not the flows of phosphorus and nitrogen, so essential for the agricultural revolution to deny the predictions of Malthus, already way beyond the boundaries where their exploitation is sustainable (Steffen 2015)?

Moreover, the COP21 agreement creates the perception that climate change, the most publicized issue of environmental degradation, is being properly addressed, but are we not blind to the multi-dimensional and intricate nature of how our systems of production impact on the natural environment? Are not we ignoring many of those dimensions, at least as critical as climate change, as for instance the plundering of mineral resources in unsustainable ways (Bardi 2014)?

All in all, Richta, Meadows and many others were fundamentally right, but in practice they have been unheard for decades. As a result, we are no longer at a crossroad, where we can easily choose between different directions, but trapped in a planetary high-speed gridlock, actually in a combination of intertwined gridlocks. We move faster and faster towards nowhere, and we are less and less able to think in perspective and get out of them. We already mentioned the gridlock of will and that of metabolism, linked to the growing divergence between what is humanly desirable and feasible in harmony with the environment, and what is financially attractive. And we trap ourselves into a **gridlock of purposes** when financial profitability becomes the core obsession of our economy, while human and natural welfares are displaced to be only fourth or fifth derivatives of what we call success. That way, the economy produces unemployment, poverty and inequality except at very high rates of growth which, as mentioned, are lethal for the depletion of resources, including climatic stability and, the least renewable of all, our own future.

And this leads us to the most intriguing **gridlock of culture**, so difficult to apprehend. Consciously or not, when facing the contradictions of everyday life we tend to pursue selfishly our individual interests, taking for granted the powerful but false idea that such a behavior is the recipe for individual and social progress. Powerful because it connects with many people adopting selfishness as a misleading relief for their fears, but false because it actually produces concentration of power and richness in the hands of a few, and therefore inhibits the potential of most and compromises the sustainability of our ecosystems. Still, what could make us choose generosity freely instead of sefishness?

Ultimately, we suffer from a **gridlock of vision**. So many concerned individuals and organizations around the world are already aware about what we describe here. Many books and reports have been written to explore the complex challenges of our times, hopefully bringing a better understanding and capability to harness them. But a strong feeling exists that it is far from enough, that in the fundamental dimensions of our future inertias are much stronger than true innovation and that our high-speed pace of change is actually reinforcing the gridlocks. For all we say about change and innovation, we mentally live jailed in the imperialism of the present. We believe that human nature is essentially immutable and that the accumulation of contingencies which has brought us to where we are today, unpredictable and often erratic as it has been, has nonetheless given birth to the only world possible. In the

name of realism, we censor ourselves, labelling as utopian so many alternative ideas of how to live, precisely when the only realistic option for the future, as Edgar Morin says, is to be utopian.

How to untie the gridlocks? First by being aware that they exist, by describing them, whatever the effort it can take to leave our usual comfort zone. Most of the time, we abandon ourselves to the social high-speed stream leading to nowhere. While we know this is crazy, we practice the very human sin of procrastination and indulge ourselves by complaining about what we live and missing good old times. So, we have not built up yet the universal sense of urgency required for deep transformations to face the threat of collapse. It may just be because those who are suffering the most are much underrepresented in the public sphere: they are too poor and generally far from the core of rich societies and powerful media. They could appear occasionally on the TV news, as Syrian refugees do, and even have a voice on the internet, but in the gridlock of thinking in which we live, who is listening for long enough? Still, when tensions of all kinds are accumulating everywhere and some of them exploding in violent ways, it is very hard to sustain that we are doing enough and going fast enough in the transformation we need. In view of the simultaneous growth of inequalities and unsustainabilities in the last decades, one cannot help asking if the dystopia of the movie "Elysium" (Blomkamp 2013) is so far away from what we are starting to live.

And what if the arts were more capable than economic and political sciences to apprehend what is happening to humanity? What if our rational capacity of analysis and action was blurred by blind spots which prevent us to be lucid and effective? Of course, at some point we will really start listening to the bad news, once the anger and fears of millions on the verge of exclusion will have destabilized enough the societal *status quo*. Will it be too late? What if the ultimate gridlock, "the gridlock to rule them all and in the darkness bind them", was our blindness to collapse?

5. A Transformative Restatement

We live in an oxymoron: everything accelerates and we are gridlocked in many ways, such as those mentioned above. But we do not live in total abstraction, we always use particular frameworks of interpretation, although we pretend to have an impossible "objectivity". We could adopt **different perspectives** in multiple space and time scales, which would produce different analyses and prescriptions. What if we take a step back and adopt the perspective not only of the economic outcomes but also of how we conceptualize the economy and how we think we control it? For sure, the systemic failures are not ignored by the mainstream thinking, but generally considered as opportunities for improvement, while keeping alive the same fundamental hypotheses about how the economy works (or should work), as a system based on efficient "free markets" which can be analyzed separately from society and the environment (in the now widespread triangular representation of sustainability). Attempts even exist to define a virtuous path out of economic dysfunctions, as f.i. in the "Lisbon Strategy" of the European Union (Kok 2004) through a combination of knowledge economy, global competitiveness, innovation, productivity and sustainability. But the Lisbon Strategy failed and the mainstream thinking did not prevent us from the deepest financial and economic crisis in many decades. Should we still use, in spite of that, the same reference framework for the debate about transformation?

For many reasons that framework is too limited, to say the least. The debate on policies still flows on simplistic stereotypes of "state", "capitalism", "markets" and "innovation", and the traditional controversy between "more state intervention and industrial policies" versus "more market and competitiveness", as if state and market were separate options while they are intrinsically entangled. No market exists without the state and public regulations, and such a thing as a "free market" does not last for long, if it exists at all (Chang 2010). And looking at real markets, the omniscient magic box able to produce an optimal allocation of resources is simply a fantasy: markets are dynamic, for sure, but they reflect the distribution of power among actors with very different outcomes ranging from private monopolies *à la* Google to situations of zero profit for all players or even self-destruction. Putting on this an "optimal" labelling is just an ex-post legitimation.

"The General Equilibrium paradigm of prevailing economic thought is built on hypotheses which are false and not even approximations to reality, the main flaw being that we humans, our organizations and life at large are always dynamic and far from equilibrium."

Likewise, neither "capitalism" (a family with different species, originated in national and historical contexts not to be ignored), nor the economy should be assimilated to markets, while there are significant contradictions between them which should be better understood and exploited for the common good (Braudel 1988). Markets appeared long before the onset of capitalism and they can be used as regulation mechanisms to produce social profits instead of the accumulation of wealth and power in a few hands, but of course this is not interesting for capitalism *sensu stricto*. Also, most activities of a modern economic system happen in ways coordinated otherwise for the sake of effectiveness, inside public or private organizations not applying internally the market paradigm but practicing collaboration instead of competition (Sapir 2000). And enterprises, as one of the social forms where the production of goods and services is organized, may lose their strength if focusing on financial metrics only. Actually, "companies should not be run in the interest of their owners" (Chang 2010), since true entrepreneurship requires the unfolding of purposes much more complex than short-term financial accumulation (including of course the creation of new jobs). By the way, does it make any sense to use the same concepts for organizations whose size could differ in 6 or more orders of magnitude, from the small shop to the largest multinational, from ants to elephants?

Furthermore, prices are not a good measure of human value since they are dependent on the distribution of power among stakeholders (Strange 1988, Sapir 2000), unless we consider that what we call "value" has to be exactly that. Prices are determined by complex processes where technical and political elements are intertwined, and they do not express either the true costs of exploiting high-energy-low-entropy resources and returning low-energy-high-entropy waste (Valero 2015). This points to a **critical gap between economic measurements and the physical world**, quite obvious when one considers the huge impact of our economic system on the environment (Georgescu-Roegen 1971, Odum 2001).

Moreover, as shown by many, the General Equilibrium paradigm of prevailing economic thought is built on hypotheses which are false and not even approximations to reality, the main flaw being that we humans, our organizations and life at large are always dynamic and **far from equilibrium** (Prigogine 1997). Surprisingly enough, the paradigm has been re-worked by additions over the original hypotheses to try to improve the results, instead of changing the assumptions completely, as would have been done in physics, a science frequently considered by economists as a model to imitate for the excellence of its practical results.

There is still more. One of the main outcomes of the current economic system is the production of huge amounts of **fictitious financial capital** (Durand 2014) as shown by the tripling of the figures in the 25 years before 2008 of the global "financial depth" (ratio of financial assets to GDP). This is a hard fact: financial figures are not reflecting reality but building up a virtual one in which fictitious capital claims of course real profits. This has been made possible by a dangerous lack of regulation of financial markets (Naulot 2013) and by our unlearning of lessons from the past, and is a pretty good recipe for further collapse (Rickards 2013).

And, last but definitely not least, the representation of human behavior in mainstream thinking is fundamentally flawed (Bina 2011). Up to a point we respond rationally to economic incentives, but we are much more than that, we are (fortunately) emotional beings whose intelligence goes much beyond so-called "rational" thinking (Damasio 2005). Maybe that gap between behavior and representation could explain the growing gap between GDP per capita (on which use as a degree of welfare Kuznets himself was sceptical) and other measures of material well-being and human satisfaction, such as the Genuine Progress Indicator (GPI) and qualitative surveys results. Above a certain threshold of material prosperity (reached in the Westin the 1970s), the GDP per capita can continue to grow while **human well-being remains stagnant** (Canois 2007, Nelson 2012). But of course this would not surprise psychologists who know that, once a certain degree of material comfort is ensured, other fundamental human needs become the critical elements of satisfaction and motivation, intangible qualities such as receiving affection and recognition, feeling a sense of protection, belonging and achievement, and developing a greater self-esteem through participation, freedom and creativity (Maslow 1943, Max-Neef 1995, Bauman 2008, Schor 2014).

In brief, mainstream economic theory is a conceptualization of a certain view of the world, hence of certain values and interests. For sure it has played a role (though a disputable one) in the evolution of societies during the last two centuries. But, whether for academic or practical purposes, this view is not able to bear the fruits we need (Mollo 2015). Getting out of it is no easy task either, in the absence of alternatives to the world system of global capitalism and its economic thinking, which is strong enough to "naturalize" its ideas and prescriptions as if they were the consequence of physical laws, and to exclude a large part of economic decisions from the political debate to justify them as "technical solutions" (as done f.i. through the "independence" of central banks). This **perception of no alternatives** is of course reinforced by the historical failure of communist regimes, which prevents us from looking into the realm of other options for the future. Conservative opinions abound, on one hand with the expectations of many to come back to pre-crisis scenarios with little variations.

And without a more elaborate vision, the revolutionary momentum of radicals betting on a whole system replacement will probably not succeed to reach power or to achieve their goals even if political power is conquered, so that radicalism may be unintentionally conservative.

Escaping from the current framework also implies recognizing that both mainstream and traditionally critical views (whether keynesian or marxist) actually share the concept of economy as a separable and mechanistic system (a machine), which can be controlled to produce desired outputs in order to fulfil our needs. Many keynesian and marxist authors would disagree with neoliberals about the design and especially about the purpose and outcomes of the machine, but still think that somehow it is a machine. This vision is built on analogy, inspired by the success of physics and its corollary of useful artifacts which have brought so much progress to humanity. And although the analogy derives from a misled understanding of classical mechanics and further developments of physics (Mirowski 1991), this conception of **the economy as a separate mechanical artifact** is widespread and has a huge impact on our social organization, long ago anticipated (Polanyi 1944). In our view it is also at the core of frustrated non-capitalistic configurations of society. Adhering to the concept of a separate machine designed to fulfil human needs and legitimate in doing so to use natural resources, whatever the consequences, has been the perfect recipe for the over-exploitation of resources in unsustainable ways, and it is no coincidence that environmental degradation happened at least as much in the Soviet Union as in Western countries.

But we still need to build something else or, to be more precise, alternative foundations which could, over time, help to transform the current system into something else (Wallerstein 2014). And the sleight of hand of the elites, adopting all alternative labels to empty them of real content, will not do the job. Actually, **systemic alternatives are building themselves**, not at the core of the system which will not transform itself until facing collapse, but rather at its borders, where there is room for true innovation. Fortunately, action precedes reflection and spontaneous phenomena happen before they are fully conceptualized. For centuries, local communities have been able to design complex rules in order to preserve scarce resources critical to the life of whole ecosystems, so that we should not speak anymore of the "tragedy of the commons" as a universal law, but rather of the "potential of the commons" (Ostrom 1990, Barnes 2006). Now, dozens or maybe thousands of local experiments are taking place in the world to find alternative ways for living sustainably.

Most of these experiments are based on bottom-up organizations, different from governments and corporations. Some of them, such as the Open Source movement, use **innovative property rights**, different from the basic options of public and private, and develop a whole new domain of peer-to-peer, "collaborative ownership" which is much wider than the most visible tip of Wikipedia (Ghosh 2005, Kostakis 2014). Some address how poorly the official indicators driving our decisions represent reality, and propose **new indicators of well-being and sustainability**, like the Sustainable Development Indicators (SDI), the Human Development Index (HDI) and others (Canoy 2007, Talberth 2007), or even try to reinvent corporate accounting to focus on the "common good" (Felber 2015). Still other initiatives foster the participation of citizens to develop **collective agendas of socio-ecological priorities** through mechanisms like the "participatory budgeting" originated in Porto Alegre and used now in hundreds of cities around the world. And of course a lot of energy is also invested by **"social entrepreneurs"** around the world to find

solutions to societal challenges (Bornstein 2004), in ways which many times build on local availability, open-source science and natural biophysical processes to square the circle of social, environmental and financial benefits (Pauli 2010). This widespread momentum even innovates in the **theory and practice of law** to explore indigenous concepts (Nagan 2013) and to help people build their own sustainable economic alternatives (Orsi 2013, Capra 2015). Not least, innovation looks also at the conception of money and value, including the use of **complementary currencies** designed to foster circulation instead of accumulation (Spash 2008, Lietaer 2011).

In the end, all of these experiments draw from human inventiveness, tenacity and solidarity when facing the consequences of hardship, when the official economy does no longer provide the right solutions (Latouche 2006, Santos 2002). And they show that alternatives exist and need not be large or mobilize huge resources to have an impact. Provided there is a good cause they can digitally mobilize people around the world, and they also show that financial incentives or the prospect of private accumulation may be worse motivators than the sense of being useful to others and get recognition for it. Moreover, these iniatives extend now beyond the territory of "freakies" and radicals, they are definitely part of the kind of transformative strategy we should envision to transcend the false, simplistic dilemma of governmental vs market-driven solutions (Klein 2015).

But of course, the alternatives could reveal to be too weak or too slow to make a significant difference and prevent the system collapse. Scaling up, climbing the ladder from local phenomena to global transformation is not an easy task, and it depends on how to make possible that the alternatives keep their entrepreneurial spirit of finding new solutions and do not switch purposes to the usual maximization of financial returns and preservation of the *status quo*. At the core of the system itself, true renewal could be easily promoted by positive action in favor of innovative SMEs when competing with established corporations. And citizens could be empowered by investing massively in education to develop personal talents and the capacity of lifelong learning, or by experimenting with social endowment as a universal foundation for equal opportunities (Mangabeira Unger 1998). So many opportunities exist for institutional innovation, democratic experimentalism and participatory processes, and using them would be so important to rebuild collective confidence, that one has to ask why only innovations compatible with the *status quo* are tested, why are we able to produce so much technological innovation, but not the political innovation needed to meet human aspirations. The answer is obvious: the *status quo* is still very strong, especially in the minds of the people taking the main decisions.

The blindness to collapse of ruling elites is reinforced by a binding effect: the limited perspective of economy as an engineered, purposeful machine whose top-down design works better when left in the few hands of enlightened leaders and private power, is perfectly coherent with their own interest in self-preservation. Of course the actual purpose of our systems is never independent from the way we describe them. The "economy as a machine" sets clear that the rest of the world is there to provide inputs and absorb the outputs, and also that there is a natural hierarchy separating the managers and designers of the machine from the rest of humans.

So, the transformation we envision requires **changing the conceptual framework** at the same time that we start transforming the system itself (Göpel 2016, Hoffman 2012, Sterman

2006).We could start by getting rid of the illusion of omniscient "free markets", which are supposed to produce an optimal allocation of scarce resources while we actually get a growing scarcity of critical resources to optimize the affluence of a few. And we could follow by a **transformative restatement**. What we call the economy is no less than a **societal-scale system of systems** whose purpose is (or should be) to **address human needs** by mobilizing and coordinating human capabilities in interaction between themselves and with the environment. This focus on human needs, instead of the creation of private wealth, is not neutral. As mentioned, above a certain threshold of material comfort our needs are intangible, so they are not necessarily conditioned by traditional wealth creation in the first place and they can also be achieved without money. Thus, monetization is not always a must, as we know from the universal feeling that the most valuable things of life, the shadow of a tree in a sunny day, the smile of a child, the sound of music cannot be computed in monetary terms.

"The transformation we envision requires changing the conceptual framework."

In fulfilling its functions, the economy creates and destroys **social structures** as well as private and public wealth. It uses all kinds of coordination and accumulation mechanisms, and especially money, which plays a significant role but does not displace everything else. The system exploits human knowledge, mostly in the form of technologies, and over the last two centuries it has developed an impressive capacity for innovating and reinventing itself (through "creative destruction" in Schumpeter´s words). Of course, the economy is **multidimensional and dynamic**, always far from equilibrium and subject to shocks of exogenous and endogenous origins, whose effects can be of first-order magnitude. The system is **recursive**, **autopoietic**, since the outcomes of its processes modify over time the structural elements (the human needs, the environment and the economic structures themselves). Therefore, it is also **historical and evolutionary by nature**, as a system but also at the micro level, where organizations of all kinds have to adapt themselves in many cases by switching from their original purposes to mere survival.

Moreover, the economy is composed of an assembly of decentralized and **autonomous agents** of different kinds, from individuals, associations and small businesses to corporations and states, from micro to macro-scales. These agents take decisions and interact continuously. They have a limited knowledge of their environment but are able to learn. The conditions under which they take decisions connect the economy with politics (through regulations and property rights but especially through the **distribution of power** between economic agents) and with society at large (through the relational and cultural structures which frame power and decision-making). And the central role of the **interactions between decentralized and heterogeneous agents**, whether happening through markets, by governmental intervention or via other forms of coordination, also means that the economy is a **network of networks**, so that nonlinearities, resonances, externalities (both positive and negative) and emergent behaviors are standard outcomes and not just accidents.

The economy is then a **complex system of systems**. This puts us in the domain of "post-normal science" (Funtowicz 1993), which means that **uncertainty** about the future is not a limitation of our knowledge but an intrinsic and irreducible characteristic we cannot escape from (Prigogine 1997). And the challenges we face to avoid collapse are themselves **complex,**

multidimensional and incommensurable and they need new ways of coordination, involving all kinds and dimensions of human intelligence, both individual and collective. For that we need the holistic paradigms of 21st century science (Healey 2009), in order to acquire a higher level of consciousness (Jacobs 2014).

6. Blind Spots and the Locus of our Fears

The economy is a complex system of systems in which a multitude of autonomous agents, individuals and organizations, play a central role. Thus, the economy cannot be limited to our conceptions of the economy. It is also about how people live and dream for them and their children, how they are inspired and motivated, how they perceive and grasp opportunities of fulfilment and how they deal with the frustration of hard presents and uncertain futures. The economy is not a machine with well-defined boundaries but part of a much more complex living system, whose meaning and purpose, yet to be resolved, may be just the persistence of life itself. And do we know enough about life to be sure that we are not destroying the very conditions of its human variant?

The more we know, the less we know. Scientific discoveries often provoke dramatic changes in the foundations of what we thought we knew. Suddenly we discover that plants have mechanisms enabling them to communicate and learn (Baluska 2010). And now we know that we have a "second brain" in our stomach, hundreds of millions of neurons active in our guts amid billions of bacteria which not only do the digestive work but influence our moods and perceptions (Gershon 1998). What we call the "brain" is not a biological equivalent of the central processing unit of our computers, but an extremely complex network of networks fully intertwined with our corporal ecosystem and beyond, thru the zillions of sensors which make us perceptive of our environment. Dualism, our reductionist view of mind and body, is dead for good. But now that we are getting more and more aware of the complexity of life, and of the amplitude of our ignorance, how could we claim that we live in the "knowledge society", or that we will reach it by using the current conceptual frameworks, or even that we are able to act in a way consistent with the degree of knowledge we think we have?

The more we know, the less we know. Our world is becoming more predictable and less predictable, at the same time. On one side our advances help to have a better understanding of partial phenomena and to produce sophisticated artifacts, which we design to be effective and predictable (although we succeed less and less in that). And at the same time the outcomes of our actions make the world more difficult to apprehend: the societal dynamics produce more autonomy for individuals, groups and organizations of many kinds, and the connections between them do nothing but grow. Autonomy and connections are what makes society a complex system that is much more than the sum of its parts, and as such also truly, intrinsically unpredictable, even more when we destabilize our environment beyond what it can deliver in a sustainable way. The balance between both trends, towards predictability and the opposite, is pretty obvious. We who hate uncertainty, we actually excel in producing more and more uncertainty on a massive scale. As a result of our dreams coming true, we live in a small world in which the distant flap of a butterfly can produce a tornado next door, in which details and macro-behaviors are connected and the center of the world is everywhere. The more we know and act, the more uncertain is our future.

The more we know and act, the less we are able to understand and control. Fortunately, this also brings the opportunity of unexpected emergent behaviors, of new capabilities of self-organization for the sake of life. And it could create as well the feeling that we are all together, of any origin, language or color of skin, in the same adventure, and that the best ideas may come, why not, from a remote place in Africa, where the whole story began. But who could ensure that our course will be happy? How could we think and work for a better future? How could we pursue any kind of relevant reflection about life, society and the future?

We could try to assume the gap between our anxiety to control and the fact that living systems are complex, autonomous, self-referring and self-constructing, but not controllable (Maturana 1980). And who said anyway that life should or could be controlled? We are emotional beings, in spite of consciousness we do not control our intelligence, which for the most part is unconscious. Modern neuroscientists have at last rediscovered what poets know since the beginning of times: that we do not take any decision without emotions, that emotions are an integral, irreducible part of what we call intelligence (Damasio 2005). But again, if the behavior of our social systems relies on human intelligence and most of it is unconscious, how could we consciously work for a better future? Let us try a crude extrapolation, the crazy hypothesis that we have **social blind spots**, which respond to deep emotions widely shared and could create, when facing the contradictions of life, the kind of hysterical behaviour which has driven us so close to collapse.

Let us apply this lens to the seemingly reasonable definition of sustainability established by the Brundtland Report (UN WCED 1987), which ideally should be a guideline for the future. It says:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- *The concept of 'needs', in particular, the essential needs of the world's poor, to which overriding priority should be given; and*
- *The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."*

Who would not adhere to this? And yet it contains some implicit assumptions which are not so benign for the future of life. First, from the point of view of the signatories (representatives of governments), it establishes a category of persons, "the world´s poor", as if poverty was an ontological condition of some humans and not a burden which is shared by all of us whenever somebody is in need. Then it puts the environment in a subsidiary position, not as the ecosphere of which we are part, but as the reservoir of resources which we are entitled to exploit for our needs. And not least, it points to technology and social organization to overcome our limitations in exploiting the enviroment. So, well-intentioned as this declaration could be and important as it was for raising environmental awareness, it is still compatible with what really happened since the 1980s: we did not give priority to "the world's poor" but to a deregulated globalization for the sake of free movement of capital and goods (but not of people) and to an ever increasing over-exploitation of natural resources.

Let us dare to name some of those blind spots on which we build our societal systems.

"When we strive to translate everything into quantitative figures, we forget that life at large but also the value of ecosystems or the performance of human organizations are complex, diverse, infinite-dimensional realities, so that they are not commensurable with a scalar, one-dimensional magnitude."

Fantasy of exclusion, denial of bonds. There is a subtle but critical difference between distinction and exclusion, which we override all the time. The first principle of social organization is still to establish the difference between "Us" and "Them". Heritage is still based on kinship, and we indulge ourselves with the concept of the individual as a microcosm, while alone we are strictly nothing. But of course this is useful to ground a moral superiority of "Us" over "Them" and to build up artificial boundaries, on which we practice zero-sum games, avoiding responsibility and recognition of unpaid labor and ecological externalities, on which ultimately we base exploitation of the many weak by the few strong, of helpless natural resources, of future time as the scarcest resource.

Fantasy of omnipotence, denial of limitations. Again, there is a subtle but critical difference between inquiring into our limitations and ignoring them; it is the difference which separates art and science, on one side, and the bulimia of instant consumerism and void entertainment to death. While in our natural instincts for drink, food, sex and fertility, sufficiency is the rule (and excess is a sign of disorder), we are insatiable in looking for material gratification at a growing speed and we feed with it our weird dreams of unlimited growth, control over the universe and insane eternity.

Fantasy of measurability, denial of complexity. The obsessive act of measuring embodies our values much better than our public discourse. When we strive to translate everything into quantitative figures, we forget that life at large but also the value of ecosystems or the performance of human organizations are complex, diverse, infinite-dimensional realities, so that they are not commensurable with a scalar, one-dimensional magnitude, whatever it is. In spite of that, we try to reduce the value of companies or the ecological impact of our actions to money, and the welfare of nations to GDP. Somehow, we have not yet abandoned the habits of slavery, when we used to do the same with humans.

Fantasy of capital, denial of potential. A prosperous future is of course built on the best we can get from past generations, infrastructures and resources, and especially the non-computable: cultural and artistic heritage, scientific knowledge, institutions and "social capital" (Putnam 2004). But at a point, capital gets disconnected from the productive economy and from reality itself, when it becomes a pure abstraction in computerized systems where it reproduces itself in a fictitious way without the backing of any human labor creating authentic value. At that point we start taking for granted that the past should have greater rights than the future, because the yields of fictitious capital absorb more and more resources and finally

inhibit the potential for further progress, until overwhelming debt is simply repudiated, as it happens once and again (Graeber 2011).

"The transformation we envision will not be straightforward, it will not happen through societal evolution unfolding in a smooth and linear sequence of causes and effects."

Fantasy of power, denial of learning. Entitled by tradition or as a reward to the heterogeneous distribution of skills and capacities, we accept the existence of inequalities and hierarchies, and the right of a minority of people to take decisions on behalf of the rest, even in the most democratic of regimes. In many senses this is a practical solution to organize societies, until power forgets the contingent nature of its position, originated in history and certainly some capacity and tenacity but also pure chance, and maitains itself over time through self-preservation and inheritance. At that point, power becomes "the ability not to have to learn anything" (Schein 2002).

Fantasy of certainty, denial of time. Our imagination is the most powerful of tools but when coupled with fear, it makes us hate the uncertainty of future, as much as we avoid the certainty of our own death. So it is no surprise if we appreciate so much the determinism of classical mechanics and its capacity to predict, which we would like to imitate in every other discipline, and in particular in economics. And looking for relief we implicitly assume, as a social taboo of our time, that money cannot lose value, that it has a natural right to reproduce itself whatever happens to society, whereas the second law of thermodynamics ensures that value does nothing but erode with time, unless we learn and work to create new possibilities.

Needless to say, the understanding of distinctions, the impetus to overcome (not override) our limitations, the capacity to measure, the accumulation of useful assets, the organisation of society and the will to create some certainties are valuable drives without which social life would simply be a nightmare. But they easily fall into the blind spots we have described because these are deeply rooted in our many fears, the fear of pain and hardship, the fear of loneliness and irrelevance and of course the ultimate one, "the fear to rule them all and in the darkness bind them", that of our sure death. We feel that we are increasing the contradictions between our human drive and the future of life as a whole, on a planet whose biophysical limits have been reached, whose climatic stability is endangered by human activity, whose living and mineral resources are being exhausted at great pace, all of that without eliminating human hardship. And afraid as we are of this permanent conflict with the world, we invent self-delusions to alleviate our fears. We observe social status and practice individual accumulation to protect ourselves not from need but mainly from the feeling of personal irrelevance and the anxieties we face everyday in our eternal quest for meaning. Is that the right response to our fears?

7. Sparks to Show the Way

Human values evolve over time, according to the way we organize our survival on Earth (Morris 2015). Time has come for a quantum leap in our strategy of adaptation to

transcend the gridlocks mentioned above by creating a new paradigm of civilization. That said, how to proceed? The challenge is dauting, since decision-makers ask for solutions, not for problems, and until the conceptual framework they use is changed, they will only accept ideas compatible with that framework, hence the acceptable "solutions" will aggravate the failures. Moreover, as shown, the economy is not an exercise of deterministic science which could be "solved" by even the most sophisticated degree of engineering. So we live in a vicious circle. For sure, the transformation we envision will not be straightforward, it will not happen through societal evolution unfolding in a smooth and linear sequence of causes and effects. We are in the realm of "wicked problems" (Camillus 2008), with high "social complexity" (Aaltonen 2006) requiring the setup of a "good transition arena" (Tukker 2007) and dealing with many dimensions at the same time. As is often the case, poets may be best suited to face complexity: Antonio Machado rightfully said that "walker, there is no way, one makes the way by walking".

Then, what can be done? Of course creating a sense of urgency for transformation (Kotter 1995). But we do not know yet where to go, so the everyday transformation goes astray. What should be the goal? An obvious answer could be "sustainability", but this cannot provide the meaning, it is only an attribute with so many interpretations that it is used as well by the elites willing to keep the current *status quo*. At least we need a substantive such as in "sustainable happiness". And we need a restatement of the whole purpose itself: from creating financial opportunities and making them humanly acceptable, whatever the social and environmental costs, to make **socially inclusive and ecologically compatible what is humanly desirable**. But this trinity does not point to separate dimensions, they are only descriptive aspects of the same, complex focal point which is an ethical statement: **human aspirations** to personal autonomy, participation, recognition and creativity cannot be fulfilled without a **universal awareness** to take care of all humanity, living beings and the planet at large. Composed expressions such as "socio-ecological" or "auto-eco-organization" are frequently used in the literature to stress the multi-dimensional complexity of the transition to be done, taking care at the same time of economic, environmental and social issues (usually giving priority to the economy). Instead, we suggest to refer to "life" as encompassing all the complexity we could imagine. Both as a synoptic guideline and the best expression of meaning, we should go towards a **Society of Living**.

But again, how we could know we are going in the right direction? Stating a practical list of policies to be applied tomorrow goes beyond the scope of this paper, which is more of an opening to debate and further research. Instead, let us try with some mottos and ideas to illuminate our way.

One could be **Diversity beyond Measure**, to ensure that social experiments as those referenced in Section 4 find their space to grow. Our obsession with simplistic measurement and high performance produces learned helplessness at the individual level and a constant pressure on purposeful organizations to switch to monetized growth for the sake of it, while entrepreneurship could instead be devoted to minimize the exploitation of natural resources and maximize employment and the participation of human talents without material growth. This would require relying on complex knowledge already available (Ostrom 2007), promoting and protecting new and collaborative forms of property, developing other types of

measurements to connect economic and physical values (Valero 2015) and experimenting as well with demonetization or alternative forms of monetization.

"The progress of civilization is not grounded on selfishness but, since ancient times, on extending the frontier inside which we practice generosity and trust by default ."

Of course, promoting diversity is also about recognizing the sacred principle of dignity for all, and that overcoming segregations, whether for gender, social, cultural or racial reasons, is both a moral and a practical imperative. It is about transforming power from a drive towards expansion and conflict, a zero-sum game played by alpha males of both genders, into a practice of shared potentialities and care of the common nature from which we all live, in which collaboration is not always but so many times better than competition. This could be achieved by **Weaving for Life**, connecting ourselves with what is beyond the boundaries we have artificially created, to recognize that we are just autonomous nodes in a myriad of networks intersecting with us, we are fragile ecosytems in dynamic (dis-) equilibrium with the zillions of bacteria on which our life depends, ourselves being tiny creatures of a societal network of networks embracing the whole planet, of which no part is truly a separate microcosm.

Then it would be clear that the progress of civilization is not grounded on selfishness but, since ancient times, on extending the frontier inside which we practice generosity and trust by default (Godelier 1994). Let us do it not only with our relatives but with the children of all nations, with all forms of life and, not the least, with the inanimate nature on which our life depends as well (just remember water). By weaving wisely, protecting the existing institutions of collective welfare and creating others, extending their reach to the whole planet and being self-demanding in our personal commitment, we could receive more than we give and create more life than we destroy.

Of course, in such a framework the only consistent way of conceiving prosperity would be through **Wealth as Networks**, not as unlimited private accumulation. Actually it is just our fantasy of capital which makes us think otherwise. Life-relevant achievements require mainly the mobilization of mindsets towards collective goals and taking advantage of the knowledge accumulated over time in the form of science, technology, art, culture, infrastructures and institutions which altogether play the crucial role of absorbing entropy between agents and across generations, and which could be made easily accessible to everybody in order to multiply human potential (Benkler 2007).

Needless to say, we will have to get rid of our neurotic consumerism, towards **Material Sufficiency and Exuberant Creativity**, which is exactly what life teaches. Demographic transitions originated in a better status of women show us the way: quality is more important than quantity, in particular for children. Moreover, there is one unlimited game to which we can direct our human drive in harmony with the environment, it is that of learning and experiencing together in the infinite variety of disciplines of knowledge, of sports and crafts,

of art and science, of beauty and truth. Unleashing human potential is another way of ensuring the universal right to beauty while avoiding burning the planet (Sen 1999).

The world would look very different if we recognized at last that every human being has talents of his own which must be developed, that emotions and human relationships are among our most valuable assets and that they can be educated to produce a multitude of individual passions for the profit of all, not for the sake of individual accumulation. Which in turn would require education to be no longer centered on reproducing social hierarchies and selecting narrow elites, but on the assumption that everybody has the same right and obligation to achieve personal fulfilment. This would lead us to a **World of Symmathesies**, to use a term recently invented to think beyond individuality and exclusion, to emphasize that there is no difference between living and learning, that we are always experiencing contextual mutual learning through interactions (Bateson 2015).

Of course this is not what is happening when, even in rich countries, the promise for most is made of exhausting, full-life work days just to ensure some material comfort and avoid the threat of unemployment. But we cannot help saying that life should be different from a mad race towards status and hyper-consumption, where so many lose and some seem to win (while losing their own time). Societal arrangements are feasible to produce what is needed with shorter workdays and a variety of professional engagements over personalized curricula, so that ordinary people would no longer be just workers and consumers, threatened by the exclusion of unemployment or the emptiness of retirement, but empowered citizens who could enjoy lifelong learning, exchanging across generations, practicing passions and participating in collective decisions at all levels.

Empowering citizens would be part of a bold claim, that of **Opening the Space of Possibilities**. Instead of suffering from our limitations, we should realize that what binds us to others, human or not, is also what makes us free, what opens new possibilities for desirable futures (Ceruti 2004). And we cannot separate any longer ontology, epistemology and ethics: the obligation to do good is not separate from recognizing the complexity of life and our connection to every other part of the universe (Kunneman 2010). Overcoming our gridlocks requires reclaiming the legitimacy of good governance and regulation to produce public goods and limit public bads, and restarting politics as the common space where collective problem-solving is debated and addressed, with ideas truly "out-of-the box". If the way we practice innovation leads to private monopolies, maybe we should revert them to public domain after some time. If the real interests of virtual capital are killing our potential for tomorrow, maybe we should try with a global wealth tax (Piketty 2013) or with currency demurrage to ensure that sleeping capital loses value over time (Lietaer 2011). Even mainstream economists know that the burden of financial debt is killing the economy, but up to now they only admit negative interest rates to get out of it without shocking the rich and powerful.

Starting with these sparks in the dark, we could try to follow the teachings of life in order to improve our social organization and avoid committing collective suicide. But, one could ask, how to learn from the mystery of improbable birth and inevitable death? Life is a pure contradiction and we will find no easy solutions to the dilemmas it creates, starting with the need for animals to feed themselves by destroying other living beings. Life is in itself a source of permanent conflict between creation and destruction, between its propensity to grow and

expand by default and the finiteness of exploitable resources. Yes, but any particular form of life, even the simplest, is also a singular opportunity to transcend that contradiction by creating the possibility of more life.

Right now, we should recognize that our expansionist and selfish interpretation of life is destroying more than it creates, and in particular it destroys the proper conditions of our own life in the future. How to reverse that? By redefining the boundaries inside which we calculate the balance of creation and destruction, in other terms by including the victims (human or not) of any kind of exploitation into our concerns. Of course, we humans cannot live without feeding ourselves, and we cannot aspire to a decent life without extracting many resources from our environment. But we can decide in which ways we frame and deal with the conflicts our existence creates. If not preserving each living being, we can apply permaculture to preserve species at the same time we ensure the appropriate feeding of all humans (Vala Ragnarsdottir 2015). We can decide to deter mutual destruction of humans through war and violence. Instead of fighting others, we can decide to fight ignorance and prejudice. Instead of accumulating useless artifacts, we can fight our inner limitations and develop our talents. Instead of practicing depredation, exploitation and exclusion, we can require ourselves to behave better for the profit of all. We can use thermodynamics and humanism to reconcile beauty and truth, the beauty of our aspirations and the truth of our limitations. We can choose creation (and self-creation) instead of destruction. We can create the Society of Living to ensure that life is able to continue its adventure on Earth. We can choose life instead of death.

8. Conclusion: Bifurcate for Good

We used to think that all human inventions mean progress, but we know this is not always true. We have accumulated an impressive amount of cultural, social and material achievements, and by so doing we have also brought the expansionist drive of life to a much higher and destructive level, able to fill the planet and alter dramatically the environmental conditions of all species, including our own, and put them and us at risk. And for all our inventions, we know we are still not able to deal with the basic contradiction of life without entering into conflict with others, whether they be humans, other living species, the natural environment in which we live, or even our own future.

Up to now we have been trying to hide those contradictions behind social blind spots which have led us into the accelerated gridlocks in which we live. And the reason for these to be so strong is that untying them is not possible in the same plane where they were created. We have to change our intellectual and emotional framework. In that plane, a clash of imperatives is already happening, **rentier aspirations are not compatible with democracy and the environment at the same time**. So tensions will only accumulate, up to a point of rupture where the sum of systemic instabilities will make a bifurcation happen towards a very different path. But this will either go down, towards collapse, violence and misery, or up, towards higher complexity and richness. Unfortunately, in historical perspective it tends first to go down before going up, because increasing complexity is not the easiest path to follow. It requires additional energy, consciousness and a sense of holism, as well as determination and generosity, all of them qualities which so many times do not win the game except when all simplistic options have been tried first, which is why human history has been built so often on tragedy.

The European wars of religion from 15th to 17th centuries were finally resolved by accepting a higher level of complexity, that of religious diversity and tolerance. Likewise, the complex and diverse European Union, that "unidentified political object", did not emerge until the unprecedented catastrophe of two gigantic civil wars of planetary scale. For sure, we will transit to a new bifurcation, this is guaranteed by the aspirations of most of humanity to break with the current *status quo*. But how do we avoid the bifurcation heading first towards catastrophes, before eventually giving birth to a new planetary eco-civilization which is far from granted? If we do not fool ourselves, f.i. by pretending that Daesh is not related to the failures of our global economic system, it is pretty obvious that we are already in the path of violent collapse, and the question maybe instead if we should focus on system reform or in building aside for the future.

The changes envisioned in this document will not happen spontaneously, they would require the political and economic elites to open their share of power to build a better world together with citizens at large, and this will probably not happen until too late (supposing we are not already too late). But in the meantime we have to go the extra mile to adapt wholly new concepts and actions. Their seeds are certainly there, dispersed but alive, some imagined by poets, others by voluntary outsiders, but also many claimed by sensitive insiders. Time has come to assemble the seeds and give them the right soil and nutrients to make them grow into a new and beautiful embodiment of life on Earth. Of course, some will say that we speak about Utopia, a land of wishful ideas which will never materialize. But being only realistic is today a recipe for disaster. And the practicality of painting sketches of desirable futures is that they can inspire not only those who already dream but also those many more who still do not dare to dream.

We, all humans, aspire to personal autonomy and dignity, to express our multiple identities in local or global communities, to receive social recognition, to practice our passions and enjoy with our relatives but also with the unknown who share our feelings, whether near us or on the other side of Earth. In a deeper way, emotional, conscious and imaginative beings as we are, we constantly look for meaning and transcendence. Achieving these aspirations is feasible in harmony with our environment but it requires changing the purposes of human organizations, a cultural revolution towards values of care and collaboration, an educational system focused on the expression of human potential through the talents of all, and the promotion of generosity as the real driver of individual and societal progress.

We do not have the roadmap to achieve those changes at global scale. But at least we know that holism and complexity are required. Ecosystems are holistic and complex *per se*, and the bifurcation we need will not be less so. First we have to recognize that complexity is not wrong, it is the testbed for the emergence of new synchronicities, of qualitatively new social artifacts (Jantsch 1980, Ostrom 2007). Second, the center of the world is now everywhere. Time has come to conceive the world not from the West to impose our conception and values to the rest, but rather to build something new together. And third, being holistic also means building with and from citizens of all over the world, through a combination of top-down, bottom-up and cross-generational approaches without which no new legitimacy will be possible. No doubt, new political and cultural processes will be necessary to transform our world, and maybe the right bifurcation will start in and from the cities, as the roots of active citizenship and small-scale worlds where we could try to untie the gridlocks and open ways to a better future.

So, let us get back from the future of our common dreams, and start making them real. Let us continue this adventure, the greatest on Earth, that of a paradigm shift of unprecedented scale in human history. Let us abandon the pervasive disenchantment of the early 21st century, obsessed with money and the exhibition of material privileges. The challenge is to build a Society of Living at peace with itself and the planet, an inclusive, sustainable and more feminine world where we could practice the obligation and pleasure of making life meaningful and enjoyable. We will never suppress the eternal dilemma between beauty and truth, but by extending our innate generosity and practicing intelligence, we can make life joyful instead of miserable. To do that we will have to bet on that word never mentioned in serious essays, but worth enough to finish with it by asking: what could be the meaning of our presence here if we do not dare to love?

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Concluding Remarks at the recent Podgorica Conference

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Global scientific output doubles in about 9 years,[1] which means that the rate is now five times larger than it was at the time of Newton, Faraday, Einstein and Bohr. Comparing total scientific output with progress in only one discipline—physics, is not correct. The end of science[2] has been claimed: there are no major breakthroughs beyond quantum physics and general theory of relativity, and theory of evolution. However, less than two decades ago when physicists were concerned with The Standard Model and the Higgs boson, measurement using ESA satellite Planck demonstrated[3] that our universe is composed of dark energy (68.3%), dark matter (26.8%) and only 4.9% of ordinary matter. And we still do not understand either dark energy or dark matter. Now, major progress is witnessed in all scientific disciplines. New inter-disciplines are emerging: synthetic biology, artificial intelligence and nano-sciences, as well as new materials—not discovered, but new, genuinely new. Is it necessary to invert Hamlet's words that "There are more things in heaven and in the earth, my Horatio, than are dreamt of in your philosophy" or are there "new materials" in one of parallel worlds of multiverses, which we are somehow imbedded in and/or connected with?

"It is estimated that the increase in our current technological ability will increase more than 500 times in the next ten years."

This article will focus only on two issues: artificial intelligence and beyond biology.

Moore's law* is the observation that a number of transistors in an integrated circuit doubles about every two years. Many studies in ICT show that performance in relation to price doubles every 18 months. It is estimated that the increase in our current technological ability will increase more than 500 times in the next ten years. The future technology will come faster than expected. It is likely that at some point in time—not too distant—machines will be smarter than humans, that which is referred to as technological singularity.[4] Kurzweil anticipates humans merging with machines,[5] whatever it means! Diamandis considers the

* Moore, G.E. (1965). Cramming more components onto integrated circuits. *Electronics,* pp. 114–117, April 19, 1965. The Economist, March 12, 2016: The Future of Computing: "In 1971 the fastest car was capable of 280km/h and the tallest building—The New York Twins had 415m. Intel launched first commercial microprocessor, the 4004 containing 2,300 transistors. A modern Intel Skylake processor contains 1.75 billion transistors. If cars and building would "improve at that rate, the car could make run at 0.1 speed of light and buildings would reach half the way to the Moon. Today 3 billion people carry smartphones, more than those having access to adequate sanitation. Improvement in computer hard work came to an end. The future of computing improvement is in three other areas: i) software e.g. AlphaGo program playing the ancient game of Go defeated the world champion (there are more possible board positions in the game of Go than there are particles in the universe [it is estimated that the total number of particles in the observable universe is 10^{80}]). To prevail AlphaGo relies on "deeplearning" technology modeled on the way the human brain works, ii) cloud, the network of data centers and iii) new computing architecture—specialized chips optimized for particular jobs.

future of unimaginable abundance.[6] Consequently, economy is rapidly changing. Classical industrial production will be unnecessary, since the advanced 3-dimensional printing will allow printing of complex products at home, so most of the distribution channels from a factory in the land with cheap labor to the supermarket store will not be necessary. Now 4D printing is coming: products that will be able to modify themselves in time. The most important component will be the algorithm for printing. Similarly, machines would perform other daily tasks, and their performance would depend on the algorithms. Today the classical software industry amounts to about $500 billion (about 0.5% of global GDP) and is growing at about 2%, faster than the rest of the economy.[7] Almost all areas of human activity will need intelligent algorithms that will control machines. Methods of artificial intelligence and other advanced machine learning tools are already used in many areas of life, and their applications are expanding rapidly. Significant paradigm changes in computing are forthcoming and the most promising seems to be the so-called quantum adiabatic computing. An example of a 1000-bit quantum computer based on quantum annealing was developed by D-Wave Systems.[8]

Chimera, part human-part animal beings, existed in folklore and fiction. Now they are a reality. Chimerism within a species occurs naturally in nearly all animals. Inter-specific chimeras rarely exist in nature due to the unlikelihood of specific conditions required. In 1989, scientists at the University of California, Davis breached this barrier and created the first artificial chimera, a sheep-goat hybrid dubbed the "geep". Such research into chimeras elicited little public attention and outcry until August 2003, when Hui Zhen Sheng at the Shanghai Second Medical University created the first human-nonhuman chimera. Sheng and his team removed the genetic material from some of the cells in a rabbit embryo and inserted human DNA, creating a human-rabbit chimera.[9] J. Craig Venter Institute transformed one kind of bacteria into another–a completely synthetic organism was created.[10] Biological research and these results prompted Lord Martin Rees to bet: "By year 2020 an instance of bio-error or bio-terror will have killed one million people." (Unfortunately, laboratory accidents happen much more frequently than the public knows! Take the case of the Bio-error in Sverdlovsk in 1979!)

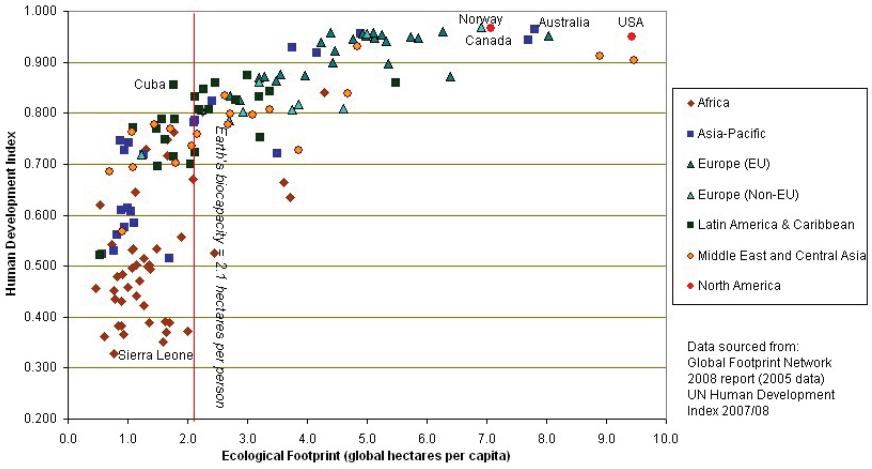
Most technologies have dual-use, many can be misused, many have been and are misused, weapons and Technologies of Mass Destruction for example, and Alexander Likhotal stresses that it is not science but ignorance that is responsible for misuse of science and technology.[11]

The new economy is an algorithm economy with sustainable abundance comprising new materials and new processes and therefore, the development of quantum algorithms and synthetic biology will have to be addressed requiring an educational paradigm change from a culture of standardization to a culture of creativity.[12] While most schools prefer logical intelligence, many young people are abundant in other types of intelligence, the significance of which is often lost on schools. This challenge will magnify as we approach the singularity, because creativity will become more important. The nature of scientific progress does not allow predicting specific discoveries, so it is difficult to direct educational systems towards specific knowledge and skills that would be necessary in the near future. In spite of this uncertainty, it is obvious that a more creative individual will have a comparative advantage in a more advanced society. Also, it is important that each person has a chance for a creative contribution to society, which is useful both to the total economic output as well as for the

psychological wellbeing of that person.* One can truly conclude that our contemporary society is characterized by knowledge explosion.[13]

The opening sentence from *The Tale of Two Cities* is "It was the best of times, it was the worst of times" describes our contemporary world: it is the best ever: our knowledge—possibly our understanding—tremendously increased, life expectancy increased, quality of life is higher than ever, but our contemporary world is not sustainable, it is self-destructing: natural and human capitals are being destroyed at a fast rate. Wars and violence, as well as chaotic migration are destroying human and also natural capital. Though significant results have been achieved such as the end of colonialism, the end of the Cold War,[14] and many successful international treaties, we are still faced with 20,000 nuclear missiles most at hair trigger alert, with chemical and biological weapons of mass destruction, terrorism, chaotic migrations† and blatant violation of international laws.

Figure 1: Human Welfare & Ecological Footprints Compared



Source: Vancouver, Canada: School of Community and Regional Planning. The University of British Columbia. OCLC 41839429.

Climate change already has huge negative consequences and it could be worse if unchecked.[15] Ecological footprint is 50% larger than our Earth can tolerate‡ (the stupidity of our contemporary development is best shown in the Fig above—a bare 10% improvement in HDI causes a factor 3 deterioration in ecological footprint) and while humans forgive sometimes,

* A. Zidanšek and I. Šlaus, see SDEWES conference, Piran, June 2016

† Knoema; Forcibly displaced people worldwide (May 23, 2016): it is estimated that over 30 million persons are displaced, twice as many than less than ten years ago!

‡ *Rees, W. E. (October 1992).* "Ecological footprints and appropriated carrying capacity: what urban economics leaves out". *Environment and Urbanisation 4 (2): 121.* doi:10.1177/095624789200400212; Rees, W. E. and M. Wackernagel (1994) Ecological footprints and appropriated carrying capacity: Measuring the natural capital requirements of the human economy, in Jansson, A. et al.. Investing in Natural Capital: The Ecological Economics Approach to Sustainability. Washington D.C.:Island Press; Wackernagel, M. (1994). Ecological Footprint and Appropriated Carrying Capacity: A Tool for Planning Toward Sustainability (PDF) (PhD thesis). Vancouver, Canada: School of Community and Regional Planning. The University of British Columbia. OCLC 41839429.

and God always, Nature never forgives.* Though humans should endeavor in colonizing space, it is important to appreciate that the colonization of space is a much more difficult task than the departure from Eastern Africa was for our forefathers. Earth is our home, as beautifully emphasized in "Laudato si, mi Signor", Pope Francis Encyclica† presented by Chancellor Archibishop Marcelo Sanchez Sorondo.

"There is no wealth but life!" – John Ruskin

"Building peace and prosperity is a long and slow process and considerable success has been achieved. But it only takes seconds to destroy that peace."

Human capital, including individual and collective creative capitals, is being destroyed by us, by our current institutions and by our laws, by our ill-conceived self-interests, by our greed and by our prejudices. Th. Pogge estimates[16] that 423 million persons have died of hunger from 1991 till 2013. This is larger than the number estimated by Rummel of persons killed by their own governments in the 20th century, which is about 200 million, or persons killed during WWII. "This economy kills!"‡ Too many people live in slavery. It is estimated§ that close to 50 million persons today live in slavery, 30% more than a year ago. Is this a result of the fact that 95% of the gain went to the richest 1% after the world's recovery from the recent economic crisis?[17] When we hear that children die from hunger and that there are slaves, we tend to push it to some distant, unknown country. Yet, though my own country and Montenegro are among the countries with smallest percentage of slavery, just 0.4% of their respective populations, the figure is still a shocking 17,000 slaves in Croatia! Indeed "This economy kills!" According to Oxfam, 62 individuals control the same wealth as 3.5 billion poorest persons. Inequality is bad for the economy: A recent OECD study showed that enriching the richest instead of increasing the income of the poorest slows down the economy.[18] Various proposals to combat this include: reduction of taxes for the wealthiest¶ and a universal basic income,** which seem to be good "solutions". Inequality[19] and unemployment destroy human capital and suffocate economic development.

Addressing crucial issues related to economy, full employment and globalization is the need of the hour. Six years ago, the World Academy of Art and Science initiated research and endeavor toward a new economy based on human dignity and sustainability.[20] The striving for the idea of a new economy is much older. One should never forget that Adam Smith was a moral philosopher. Sinking of SS Central America in 1857 prompted John Ruskin to switch to economics. Arguing against Malthus and Ricardo, Ruskin wrote: "The real science of political economy, which has yet to be distinguished from the bastard science, as medicine

* Farmer to Pope Francis

† Pope Francis, Laudato si, Encyclical letter, May 24, 2015 and officially published on June 18, 2015

‡ Pope Francis: Evangelii Gaudium, Nov 24, 2013

§ Walk Free Foundation, www.walkfree.org

¶ The Economist, January 2, 2016, "Be serious"

** The Economist, June 4, 2016, "Basically flawed"

from witchcraft, … is that which teaches nations to desire and labor for thing that leads to life." And Ruskin concludes, "There is no wealth but life,"[21] which foretells a recent statement by the UN "People are the true wealth of nations."[22] Putting it in numbers, human and natural capital are for most of the countries much larger than the manufactured capital (we devote so much time to), e.g. for the USA inclusive wealth is over 100 trillion, while manufactured wealth is less than 20 trillion.[23]

The 70th anniversary of the UN is marked by two significant results: Transforming Our World: The UN Agenda 2030, also known as Sustainable Development Goals (SDGs)[24] unanimously accepted by the UN GA on September 25, 2015 and the Paris Agreement on Climate Change,* actually an important segment of SDGs. Both documents are expressions of core values necessary for survival, for human-based world. We in the World Academy are proud that several years ago, following our work on new economy and full employment as well as our endeavor to abolish war and any form of violence, we initiated an encompassing endeavor: A New Human-based and Humanity-based Paradigm. We realized that the contemporary world has truly dangerous enemies: destruction of natural and human capital—destruction of trust, extremely high unemployment and income inequality—economic, political and above all moral crises. Building peace and prosperity is a long and slow process and considerable success has been achieved. But it only takes seconds to destroy that peace. Let us not forget the words of President D.D. Eisenhower: "Every gun that is made, every warship launched, every rocket fired signifies in the final sense a theft from those who hunger and are not fed, those who are cold and not clothed. This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children." The old approach "they" and "us" does not solve anything."[25] Our endeavors are just at the very beginning. They do demand more research and much more understanding. It is not the work of one person, not even an organization, or scientific enterprise, not only of the UN. It is a joint endeavor of all of us, all 7 billion, all sovereign countries, scientists throughout the world, scholarly institutions, academies, business, laborers and trade unions. It is gigantic. It is comforting to realize that the pillar of this endeavor is deeply rooted in us—in the Golden Rule, in all major cultures, in our biology and in our history and it is the guarantor of our future. [26]

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Beyond Perspective

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Abstract

This short article suggests that as effective as it might be for dealing with technical issues, rational thinking seems totally hopeless for the essential human problems, because it confuses wholeness with totality, i.e. the whole with the sum of the parts. Thus, the source of our difficulties as a species is not the problems themselves, but rather the structure of consciousness from which we attempt to solve them. While this insight is certainly not unknown, what might be new is the recognition that the paradigm we now live in has actually already changed. The dawn of the 20th Century brought with it not only Hermann Minkowski's discovery of spacetime, but also Jean Gebser's discovery of a new structure of consciousness appropriate to it. Gebser saw in the contemporary scientific, philosophical and artistic breakthroughs a consciousness operative beyond three-dimensional perspective, which he described as a-rational and a-perspectival. It is not so much free of space and time as it is free in spacetime. With the discovery of four-dimensionality, humanity now has a new geometric world-space in which to reveal itself to itself from which to address its problems. Instead of knowing oneself as a fixed-point character in a story moving through time, one can know oneself as the field of spacetime itself within which the story occurs. And this allows for being in the presence of wholeness. If we assume that there is a single or at least primary cause for the many, many problems that we as humanity are now facing, then what would it be and how could we successfully address it?

"The source of our difficulties is not the problems themselves, but rather the structure of consciousness from which we attempt to solve them."

When I look at the world, whether on the evening news or in my personal circle of acquaintances, I mostly see a complexity so great that almost every attempt to solve a problem seems to create a new one at least as big. Rational thinking, as effective as it might be for dealing with some technical problems, seems totally hopeless for the important human ones. And this leads me immediately to Ludwig Wittgenstein's famous statement about problems:

> *"The fact that life is problematic shows that the shape of your life does not fit into life's mould. So you must change the way you live and, once your life does fit into the mould, what is problematic will disappear."*

If we take this seriously, then the source of our problems would seem to be the discrepancy between the shape of our lives and the shape of life itself. I think what he means by "life's mould" is wholeness; however, we live our lives as if life were composed only of parts. In other words, the fundamental blind spot, which prevents us from solving our biggest existential problems, is that we confuse wholeness with totality or the sum of the parts. The source of our difficulties is not the problems themselves, but rather the structure of consciousness from which we attempt to solve them. The rational, linear and dualistic mindset is confronted on all sides by a "Humpty-Dumpty" situation. It perceives a fragmented world, which it is desperately trying to put back together again in order to reach wholeness.

While this paradigm may be useful for splitting atoms or inventing smartphones, it is not too helpful when, for example, attempting to bring about world peace. Everyone may understand that war is insane, but our understanding does not seem to be sufficient. This is because our actions are not derived from our understanding, but rather from the way the world appears to us. And how the world appears to us is given by the paradigm from which we are looking. In other words, what we see depends on where we are looking from and our actions, in turn, depend on what we see. So long as we see only a world of separate objects and we are looking at it all from one of those objects called "me", which is known as the subject, our actions can only lead to a Humpty-Dumpty futility.

But so much has already been written about the limits of the Newtonian/Cartesian paradigm, what could there possibly be left to say about it. People have been talking about wholeness for a long time and we even often say: "The whole is greater than the sum of the parts." Furthermore, cognitive science has long recognized the role of perception in the determination of action. What might be new, however, is to appreciate that whether we understand it or not, the paradigm we now live in has actually already changed. This fact may not yet be widely accepted, just as I imagine not everyone living in 1493 accepted that the world was no longer flat, or even knew about it.

Although Albert Einstein is usually considered to be the modern Columbus, I think he has to share that title with Hermann Minkowski. Minkowski was a mathematician, who in fact, was one of Einstein's teachers at the Polytechnikum in Zurich. In a speech at the 80th Meeting of German Natural Scientists and Physicians in Cologne on September 21, 1908, he famously announced:

> *Henceforth space by itself and time by itself are doomed to fade away into mere shadows and only a kind of union of the two will preserve an independent reality.*

And with that, Minkowski introduced spacetime to the world and with it a new possibility not only to make sense of the Theory of Special Relativity, but also to begin to see the world we live in as a four-dimensional reality.

It's probably impossible to put an exact date on the birth of any paradigm, but the Italian poet Petrarch's account of his ascent of Mont Ventoux has often been cited as heralding the end of the Medieval and the beginning of the Modern periods. Written in about 1350, he describes his ecstatic experience of reaching the summit, gazing at the landscape spread out before him and discovering three-dimensional space. This may sound bizarre to anyone living in the

21st Century for whom it might seem that three-dimensionality has always been a feature of reality. But consider that medieval paintings don't portray three-dimensionality; they depict a flat, two-dimensional world. Petrarch's account already contains the seeds of the Newtonian/Cartesian paradigm precisely because it presents the discovery of perspective. Inherent in perspective is the existence of two points in space: a "vanishing point" on the horizon and a point-of-view in the observer. And with that, the space in between comes into existence as a geometric dimension. Tellingly, in a poetic flourish, Petrarch claims he then opened his copy of St. Augustine's "Confessions" and randomly came upon the following passage:

> *People are moved to wonder by mountain peaks, by vast waves of the sea, by broad waterfalls on rivers, by the all-embracing extent of the ocean, by the revolutions of the stars. But in themselves they are uninterested.*

Petrarch is presenting an inner world discovery, which was revealed through an interaction with the outer world. Inner and outer space become the two poles of the three-dimensional field. The coming into being of perspective (and with it point of view) is one of the chief hallmarks of the mindset of Modernity. From here it is only a matter of time before science will explore the laws of that three-dimensional space (e.g. Newton's laws of gravity), just as literature will explore the inner world of human beings living in that space (e.g. the rise of the novel) and just as philosophy will explore the dualistic and causal relationship between these inner and outer spaces (e.g. Descartes' mind-body separation).

However, though we now live in a Post-Modern paradigm, we are trying to solve our biggest problems as if we still lived in the last paradigm. Michael Michalko, in an article titled "Janusian Thinking", suggests that humanity needs a particular kind of creative thinking to address the myriad of problems facing us; a kind of thinking that can hold two contradictory points of view at the same time—hence the reference to the god, Janus, who had two faces looking in opposite directions. Though Michalko does escape being caught in a single point of view, I believe he does not go far enough. While Modernity was based on the discovery of space, Post-Modernity is based on the discovery of time. The dawn of the 20th Century brought with it not only the discovery of spacetime, but also the discovery of a new structure of consciousness appropriate to it.

One of the greatest almost unknown geniuses of the 20th Century was Jean Gebser, who saw in the contemporary scientific, philosophical and artistic breakthroughs the birth of a new consciousness, which he described as arational and aperspectival. It is a consciousness unattached to any point of view and hence beyond perspective; it is not so much free of space and time as it is free in spacetime. And everywhere it has been revealing itself.

While the consciousness of Modernity was based on a clear Newtonian/Cartesian separation between the inner and outer world-spaces, the findings of Quantum Physics call that separation into question. Picasso drew the human figure in "Les Demoiselles D'Avignon" from so many points of view that the concept of point of view itself is no longer applicable. Rainer Maria Rilke's poetry transcended the subject/object basis of language to create a luminous world appearing unattached to any point of view. Akira Kurosawa made the film, "Roshomon", staging the same event from so many different points of view that the notion of a point of view itself becomes the main character of the story.

"The change required, however, is not on the doing level. It is rather a change of consciousness; a change from identifying with a three-dimensional point of view to knowing oneself as a four-dimensional aperspectival field."

Which brings us back to Minkowski, Wittgenstein and our many, many problems. With the discovery of four-dimensional spacetime, humanity now has a new geometric world-space in which to reveal itself to itself and from which to address its problems. And with this new image of reality, Wittgenstein's admonition to change the way we live so as to fit the mould of life begins to make more sense. The change required, however, is not on the doing level. It is rather a change of consciousness; a change from identifying with a three-dimensional point of view to knowing oneself as a four-dimensional aperspectival field. That is, instead of knowing oneself as a character in a story moving through time, knowing oneself as the field of spacetime itself within which events occur. This is being in the presence of wholeness.

As for how to do it, there is nothing to do. Or said another way, what does one have to do to live on a round world instead of a flat one?

Opening ourselves to this would be like waking from a nightmare. So perhaps it's fitting to end with William Blake's famous couplet:

... May God us keep
From single vision and Newtons sleep

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Conversations That Matter

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Abstract

The article is about building a bridge between abstract discussions and conversations that matter. It is about transcending silos through everyday dialogue. It is about helping companies, governments and communities operate in harmony with the way people really are, rather than the way authorities want them to be. It proposes that conversations that matter are a framework for turning cognitive dissonance into action. The object is to bring physical and relational coherence to life and work, and to offer access to integrating high performance and human mutuality. The premise is that a major problem with making a difference in the most challenging situations is abstraction itself, and that analysis, even when comprehensive, is necessarily linear and cannot produce a quantum shift in behavior, vision, strategy and action. The case is made that conversations that matter can never find their way onto a PowerPoint. Conversations that matter call for the truth about people's actual experience, with kindness and direct speaking at the same time. Timidity, fear, anger, power and position inhibit conversations that matter. From global warming to corporate, governmental and personal dysfunction, the cost of the unsaid truth is immense and ultimately deadly.

> ***"The day science begins to study non-physical phenomena, it will make more progress in one decade than in all the previous centuries of existence."***
>
> **– Nikola Tesla**

Recently, I was with a noble man, a leader and a force for successful betterment in the organization, education, community, and in the world. For nine years there had been one cultural and pragmatic victory after another in the face of recession, social drama, deterioration, and racial, political, union and everyday conflict. Every time we met, there were conversations that led to insight and action that produced an improvement in culture and performance. Their reputation ratings moved from among the lowest to the highest ratings in the nation. It was always easy for me. All I had to do was engage, talk, share what I had recently learned, and create responsively with him about his deepest concerns in real time. The conversation was always flowing and he was open to discovering what he didn't know, and did not know he did not know.

This time was different; a bridge too far it seemed. He looked tired and used up. I had a sensation in my chest that comes with being with someone who is depressed and overwhelmed. Everything I said seemed to have no impact. I felt sad for him, and all my good ideas felt abstract and without power. People he had trusted had failed in leading crucial businesses. Political behavior and government bureaucratic requirements took away

important time. The volume of mind-numbing information had reached the point where it was harder and harder to make sense of it and find coherence. There were new members in the team and the world champion spirit he had evoked had diminished. In the face of it all, business was still good and they remained industry leaders, but he no longer felt the thrill and momentum of earlier days.

"The Kairos Point is the moment of change—the moment where what will never happen, happens. It is the moment where the impossible becomes possible."

We talked for six hours, and by the end we had had a conversation that mattered, that brought some coherence and intention for him and the 10,000 people who work for him. But what had truly made the difference? I know it did not come from my preparation, good ideas, abstractions or checklists.

Looking back, what mattered was that he was able to share with what he really cares about, his anger at dysfunction, his commitment and love for many people, and his tiredness at the unremitting pace and unfathomable complexity of seeing no light at the end of the tunnel. What mattered came from my unqualified positive regard, my "being for" him and his well-being and future. It came from listening to and encouraging him to tell his truth exactly as it was for him, the awful reality of his experience.

There was nothing abstract in the room with us. The precept that 'the truth will set you free' was real, vibrational and painful for both of us. What happened was freedom to choose. Mind you, this is no ordinary human being. This is an accomplished hero and the depth of what mattered to him had become buried under history, circumstance, and people rising beyond the level of their own competencies.

I have come away from this day certain that Conversations that Matter can never find their way onto a Powerpoint. Ideas and steps are useful but a conversation that matters calls for the truth about people's actual experience, and sometimes gets to the awful truth, with kindness and direct speaking at the same time. Timidity, fear, anger, power, and position prevent conversations that matter. From global warming to corporate, governmental and interpersonal dysfunction, the cost of the unsaid truth is immense and ultimately deadly.

Conversations that Matter create "Integration"—the Possibility that Business, Education and Government can operate in Harmony with the Way Human Beings Really Are.

1. Hypothesis I: The Kairos Point is a Portal to Conversations that Matter

The Kairos Point is an aspect of the present moment—an awareness that, when sensed and embraced brings coherence and connection to an entire universe of possibility; meeting the right partner or job, choosing a life path in harmony with your bliss, following what you are naturally called to be or to do, saying the final "no" to a relationship or situation that never

works. Embracing the Kairos Point brings physical and relational coherence to life and work and is one access to integrating high performance and human mutuality.

The ancient Greeks had two words for time, Chronos and Kairos. The former refers to chronological or sequential time. Kairos signifies a kind of time lapse—a right, opportune, or supreme moment of indeterminate time in which everything happens at once. While Chronos is quantitative, Kairos has a qualitative, permanent nature. (Wikipedia defines it as, "a passing instant when an opening appears which must be driven through with force if success is to be achieved.")

Author, mathematician, musician, and teacher Alan Smithson brilliantly proposes[1] that reality is neither in our minds nor in the physical world, but where the two meet. At this 'Kairos Point' the world of science merges with the world of mind and spirit.* The Kairos Point is the moment of change—the moment where what will never happen, happens. It is the moment where the impossible becomes possible.

The Kairos Point is an aspect of any moment, recognized or not—a window seemingly connected to everything everywhere, which offers the possibility of an immediate, intuitive insight. In the moment of embracing a Kairos Point, it has embraced you. When you chose it you then belong to the universes to which it is connected by countless invisible strings that serve as puppeteer from your future.

The Kairos Point is a moment of insight, offering Escape Velocity from the fears, norms, families, neighborhoods, religious-driven rules, and cultural practices others believed, taught, lived and died with. It is the moment when I ordain, embrace, or claim as my own an aspect of the present; a moment of knowing without thought.

The Kairos Point occurs as an "oblique shaft of Illumination." In embracing and acting on these moments, the awareness of what's right for an organization, an educational system, a profession, and what's right for the people occurs in one seamless moment of hope and possibility.

2. Prominent Examples of the Kairos Point

- In 1955, Rosa Parks refused to move to the back of the bus in Montgomery, Alabama. It was a Kairos Point—a pivotal moment in the 21st century. At that time, racial segregation laws in parts of the United States required African-Americans to give up their seats on public buses for white passengers. In her own words, "*I was determined that I let it be known that I did not want to be treated in this manner. The policemen had their squad car waiting, they gave me my purse and bag, and they opened the back door of the police car for me to enter. I didn't have any idea just what my actions would bring about. At the time I was arrested I didn't know how the community would react. I was glad that they did take the action that they did by staying off the buses*."

  When Rosa Parks remained sitting, Martin Luther King took the power of her stand to spark the Montgomery, Alabama Bus Boycott, and became an important driver of the Civil Rights Movement.†

* Kinesiology offers a test for the power of this intersect in any particular instance. See Power vs. Force, David R. Hawkins, 1985.

† See http://teacher.scholastic.com/rosa/sittingdown.htm

- When the American President Franklin Delano Roosevelt gave his first Fireside Chat on the radio in 1933 at the height of the banking crisis in United States, the world turned. At that moment, that Kairos Point, Roosevelt ordained the collective experience of who we are, how we are, and what America should be. He was fact based, deeply concerned for the public, honest about the depth and extent of the breakdown, authoritative, dedicated to reconstruction, devoted to values, and declarative in saying that there would be regulations. He was not speaking for effect as is so often common. In Roosevelt's request for cooperation and requirement for regulations, he spoke to the hearts and minds of the country from his own heart, and was direct, vigilant, and with full intent.

  Listening from that place, my faith is renewed in the possibility of transformation.*

- Albert Einstein's moment of knowing that sense experience and thinking have no necessary relationship…, that the relationship between a person's sensory experience and what they think is purely arbitrary, even though it makes perfect sense to them. In that moment, he saw in himself an amazing free play of imagination. He later said that this was the 'code breaker' in all human affairs, business, science, art, leadership and community.†

- The first meeting between President Reagan and General Secretary Gorbachev took place in Geneva, Switzerland in November 1985. Reagan and Gorbachev discussed all areas of US-Soviet relations. Overall, the two leaders used the meetings to feel out each other's positions. Although no significant agreements were made, the two leaders agreed to meet again. This choice was a Kairos Point. It shifted a previous impossibility and started a process that led to thawing of Cold War tensions and more effective arms control.

- The moment Angela Merkel saw that accepting Syrian immigrants into Germany was both an act of mercy and a transformation of Germany's cruel past in the eyes of the world.

- The moment in Mahatma Gandhi's life on June 7, 1893, when during a train trip to Pretoria a white man objected to his presence in the first-class railway compartment, although he had a ticket. He refused to move and was thrown off the train.

- A UK telephone company CEO said the Kairos Point was the moment he realized he was responsible for human energy rather than roles, systems and profit—human energy was released and expanded. Their hopelessly impossible target of £100,000,000 over the next year actually happened. When he spoke about some of the team thinking he was on drugs and that this was 'Mission Impossible', he said, "…, *the good news is that I am pleased to say we hit it a year earlier than expected…, fantastic news*."

- The moment when Karl Marx saw that the capitalist economic system was itself an important cause of general misery.

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* See http://www.americanrhetoric.com/speeches/fdrfirstfiresidechat.html

† From an unpublished letter shared by my friend, Howard Sherman, in a personal conversation in Santa Fe, New Mexico in 1999.

- US President Richard Nixon's choice to go to China in 1972 and open conversations with Mao Zedong was one of the major transformational events of the 20th century, with great commercial and political benefit to both countries. It was a remarkable and surprising Kairos moment. He paraphrased Mao's own words when he said (as quoted by Nixon biographer Stephen Ambrose); "*You are one who sees when an opportunity comes, and then knows that you must seize the hour and seize the day*."*
- The moment when US State Department officer George Kennan saw that "containment" was a better way to relate to a nuclear Soviet Union than war.
- The moment so many Americans realized that John F. Kennedy and the hope he represented for the country had been assassinated.
- The moment Mikhail Gorbachev embraced the transformational possibility of Glasnost and Perestroika.
- The moment in 1978 when Anwar Sadat chose to go on a peace mission to Jerusalem, which led to the Camp David Accords and years of peace between Egypt and Israel.
- The moments of Steve Jobs' repeated choices to create and hold forcefully to his vision of the future of Apple and its products.
- The moment when the leader of a division of one of the world's largest information technology providers chose to make 1500 disparate products manufactured in five countries accessible through a single on-line channel, and integrated enormous diversity with great harmony in the face of a corporate culture that had been divisive and segmented. With intent, facilitation, and good will, it all worked.

3. Hypothesis II: Conversations that Matter are a Framework for Turning Cognitive Dissonance into Action.

A Conversation is an informal exchange between two or more people, involving sentiments, observations, opinions, ideas or media. It is an art or creation that people can play with and give life to.[2] A Conversation that Matters transforms the base metal of everyday reality from the experience of, *"this is just the way it is and has to be"* to the experience that, *"my own life's search for personal meaning can happen while I'm helping a company to succeed."* In practice, these conversations are not sequential or linear, but occur repeatedly, informally, and are free-flowing, with an intent to practice and master Human Mutuality with Pragmatic Success.

The experience of Cognitive Dissonance is necessary before people will choose to go beyond what they already do. Such dissonance is the foundation for an acute experience of the unacceptable contradiction between something you really want and the seemingly inescapable truth of the way it actually is for you. We are referring to an intensity that is experienced physically, emotionally, and sometimes spiritually.

* I never liked Richard Nixon and saw him as a devious man. The insight in this is that the power of a Kairos moment has little to do with one's own judgments about the virtue of the person who experiences it. I sometimes devalue or fail to recognize the importance of a Kairos moment when I don't respect the author in the first place. This is a conundrum. Beyond being aware that a Kairos moment is intuitive and the power comes from ordaining its importance, there is little else to say.

Conversations that Matter create "Integration"—the bringing together of parts of an organization or a system into a whole that is experienced as greater than the sum of its parts. On one side is the order and control needed for the system to survive. On the other is peoples' search for meaning and freedom in their own lives.

"The world does not consist of objects; underneath the apparent reality of objects was the underlying reality of interacting energy flows."

The following steps are design principles for organizations to achieve "continuous integration" while operating in harmony with the way people really are.

4. Eleven Steps

4.1. Step One: Surrender to the fact that you have almost no control when it comes to explaining, rather than inquiring.

Much of what people do in business and government is locked in place by explanations. Like alcohol, explanation need not be a problem. The problem is in having to explain. It is a widespread addiction; women explaining men, men explaining women, advocates explaining why their strategy is the right one… Explanations in the mid-east have people blowing themselves and others up explaining that they can get into heaven faster. Others say that there is no God and all we have is ourselves, with explanations for that. Investment companies and banks explain the virtues of security and greed. Everyone has clay feet, but their explanations always make them right and their opponents wrong.

I distrust the explanations of anyone who is selling or controlling something. They only tell me the part aimed at helping the sale. Advertising, public relations, politicians and nations have "Explanation Addiction" in common. These explanations give the illusion of certainty and allow us to avoid the discomfort and anxiety inherent in raising fundamental questions. Explanation prevents considering a shift that comes from stepping into the unknown.

Explanation *is* addictive. Friedrich Nietzsche wrote, "*To trace something unknown back to something known is alleviating, soothing, gratifying and gives moreover a feeling of power. Danger, disquiet and anxiety attend the unknown—the first instinct is to eliminate these distressing states and the first principle is that any explanation is better than none.., what drives this addiction and excitement is the feeling of fear…*"

Behavioral psychologists say the process of explaining actually releases chemicals in the brain that make us feel good. We literally become addicted to the simple explanation. The fact that our explanations may be irrelevant or even wrong is not important for the chemical release.* *"Most people, when faced with uncertainty, need the 'fix' of their already adopted explanation to feel secure. The imagery of a junky blindly following his 'feel good' could*

* John Mauldin, http://www.frontlinethoughts.com

*easily be linked to the stubbornness we see in politics, among other things."** So, we eagerly look for more explanations in order to feel good.

"*Before humans learned how to make tools, how to farm or how to write, they were telling stories with a deeper purpose. The man who caught the beast wasn't just strong. The spirit of the hunt was smiling. The rivers were plentiful because the river king was benevolent. In society after society, religious belief, in one form or another, has arisen spontaneously. Anything that cannot immediately be explained must be explained all the same, and the explanation often lies in something bigger than oneself."*[3]

The practice of Inquiry enables Human Mutuality and Exceptional Performance. Inquiry interrupts unnecessary explanation. Inquiry is seeking for truth, or a request for truth, information, or knowledge. Inquiry without interruption enables new possibility and Conversations that Matter.

4.2. Step Two: Be a steward of energy—responsible for the expansion of energy and vitality in you and others, between departments, and between your organization and society, as your bottom Line.

Observing levels of energy comes first—within individuals, groups of individuals, between departments, units, between levels. Even slight levels of energy expansion produce dramatic shifts in culture and performance.

Integration of extraordinary performance and Human Mutuality is an energetic, not a linear phenomenon. In my personal journey I moved from seeing organizations as static objects to seeing them as interactive energy fields. I ran a successful company, but over time as my energy and inspiration waned, many things began to fall apart. I began to realize that companies and people succeed when they have a lot of energy (assuming they know what they are doing), have talent, and have a good product or service to sell. And they begin to fail when people stop generating energy for themselves and for each other, as individuals, departments, entities. Before I had clearly articulated this, it was a background awareness that things were good when personal and team spirit were strong. Things did not work well when team spirit, personal and departmental energy was weak, and this was predictive of success.

About the same time, Pomo Indian medicine man Loren Smith taught me that, *"Life and work are all about maintaining, preserving, and increasing the energy you have, personally and collectively."* In this, he was representing something I had not seen before; that it was possible to live in a world in which my relationship with my own energy and the energy of others was central. He had an ability to see what I was not trained to see. While I could sense some of this in my work with groups, I was not really construing it in a kind of energetic framework, as he did. What he was able to produce, in terms of sick people getting better, or groups going from non-directed to focused, was fast and remarkable. It was as though he was breathing life—energy—into them. His view was that that the world does not consist of objects; underneath the apparent reality of objects was the underlying reality of interacting energy flows. Having good ideas and strong intentions was important, but what is decisive is the available energy.

* Jonathan Lewis Smith, private conversation

In facilitating Conversations that Matter, the practice is to be a steward of energy and vitality. A Steward's sacred responsibility is to take care of something.

4.3. Step Three: Embrace the Paradox of Humility and Strength.

A paradox is a seemingly absurd or self-contradictory statement or proposition that, when investigated or explained may prove to be well-founded or true. In the words of Vaclav Havel, former President of Czechoslovakia,*

"*At the beginning of everything is the word. It is a miracle to which we owe the fact that we are human. But at the same time it is a pitfall and a test, a snare and a trial. More so, perhaps, than it might appear to you who have enormous freedom of speech, and might therefore assume that words are not so important. They are. They are important everywhere. The same word can be humble at one moment and arrogant the next.*

It is not hard to demonstrate that all the main threats confronting the world today, from atomic war and ecological disaster to a catastrophic collapse of society and civilization, have hidden deep within them a single root cause: the imperceptible transformation of what was originally a humble message into an arrogant one.

Having learned from all this, we should all fight together against arrogant words and keep a weather eye out for any insidious germs of arrogance in words that are seemingly humble. Obviously this is not just a linguistic task. Responsibility for and toward words is a taste which is intrinsically ethical."

In parallel, come to a Conversation that Matters *"as you would go to war; wide-awake, with fear, with respect, and with absolute assurance. Going to knowledge or going to war in any other manner is a mistake, and whoever makes it might never live to regret it."*†

The Practice is to facilitate a Conversation that Matters with Humility and Strength—a practice that enables "Integration" because people respond to the way you are being more than to what you are saying.

4.4. Step Four: Tell the Truth about your Experience

"The truth is what you experience. The truth believed is a lie."

– Werner Erhard

Comedian Flip Wilson said he believed in the church of "What's Happening Now"—a religion of paying attention to what's actually present, and a way of recovering, moment-to-moment from changing circumstances, things going wrong, upset relationships, boredom, loss of support and countless surprises that always happen and can keep you from fulfilling your mission and getting what you really want in business and life. Practice noticing what you are aware of about others, yourself, and the situation:

- Keep noticing the difference between what you are aware of in the present moment, and what you are thinking.

* Peace Prize acceptance speech, German Book Seller's Association, Frankfurt book fair, 1989.

† Adapted from Carlos Castaneda, The Teachings of Don Juan: A Yaqui Way of Knowledge

- Ask what is knocking you or others off the block, taking you away from purpose; what you want, what you notice, if you are bored, distracted, scared of looking foolish, experiencing too much complexity, spending too much time on your favorite activities instead of what's needed, keeping the game small, not wanting to deal with all the problems you know you'll have with people, feeling greedy and not wanting to share, overwhelmed, fearful of being dominated, lacking political support or formal power, anxious that nobody else cares, etc.
- Notice the degree to which individual and group energy is in focus. Do people have the ability to direct usable power in service of mission, strategy, and immediate requirements to recover from circumstances and breakdowns? Or is there a condition of passivity, of not being fully engaged, inactivity, reacting to external agencies, lacking in energy and wellness, and tending not to take an active or dominant role?
- Notice the degree to which you or others are "on mission", with adherence to essential purpose, ultimate goal, singular outcome, strategic intent and responsibility that one has been especially called upon to undertake. Or are you "off mission", off purpose, distracted by circumstances, having primary responsibilities elsewhere, or unclear on purpose?
- Notice the degree to which strategy is in action. Is there a plan being fulfilled, a blueprint being built, a design being accomplished, a game plan being executed? Or is strategy not in action? Is a plan, blueprint, design, game plan not formulated, or conceived but not in satisfactory action, not embraced by others, or being executed inconsistently?
- Notice the degree to which a person or group has the attitude of a hunter. Are you pursuing your intentions with intent to capture, determined to win, in steadfast pursuit? Or are you behaving like prey, feeling acted upon and adversely affected by a force or agent, injured or sacrificed by conditions, subjected to oppression, hardship or mistreatment, helpless or unable to resist?
- Notice the degree to which you and others are open to your environment. Do you, or the group have confidence in your immediate judgment, no hesitation, accessible to input and other participants, and free from limitations boundaries or restrictions? Or are you trapped by your own ways of being cautious, not playing to win, playing small, fearful of looking bad, resistive and avoiding the domination of others?
- Notice the degree to which you are connected. Are you, or the group, in direct personal connection by speaking, listening, moving and looking? Are you in a condition of immediate proximity and exciting connection, with the effect of being "in relationship" and "in communication"? Or are you deflecting contact, blocking personal connection by avoiding or suppressing speaking, listening, moving, and looking? Are you blocking the directness of connection by turning aside, diverting and digression?
- Notice the degree to which poor decision making may be based upon emotional responses to peer and hierarchical pressure, family or friends rather than an objective evaluation of a situation.
- Notice the degree to which your or others' existing mindsets keep you from recognizing and coping with changes.

- Notice the experience of "Got to Get There—it is" impairing judgment by a fixation on the original goal, combined with disregard for any alternative course of action.
- Notice the degree to which strategy and action are always characteristic, always the same.
- Notice the presence of subtle, non-verbal clues.

"If you want to change the future, change what you are doing, what you are paying attention to, right now, consistent with the future you want."

4.5. Step Five: Honor both Performance Checklists and Noble Purpose.

Story Musgrave is a 30-year astronaut, team leader of the amazingly successful effort to repair the Hubble Telescope, a medical doctor, and a military pilot. The privilege of working with him briefly challenged me with a gift—the possibility of integrating transcendence and extraordinary performance in systematic and measured ways.

So many people with noble purpose seem too soft and flaky. Others with pragmatic and measured purpose seem overly crass and lacking nobility of purpose. In his way of being and operating, Story had accepted or integrated the paradox of noble and transcendent purpose, exhaustive checklists, and the committed speaking that took us to the moon and assures an effective, global airplane safety record around the world.

The Practice in service of Exceptional Performance and Human Mutuality is to declare to yourself and the Universe that these can happen at the same time.

4.6. Step Six: Apologize and make Amends where you have been responsible for suppressing human energy and vitality.

If energy expansion is the bottom line for extraordinary performance and human mutuality, it becomes important to take personal responsibility for suppressing the energy, vitality, and team spirit in others. Paying attention to the importance of one's own and others' energy level is novel and takes practice. This is different from what's conventionally considered as right and wrong, and can easily be confused with having to be nice, which can devolve into soft, stifling cultures.*

In the Alcoholics Anonymous addiction treatment program, members are asked to make direct amends to people they have injured wherever possible, except when to do so would injure them or others. If a healthy business or government depends in great part on the energy and vitality of people and functions, then regularly or systemically suppressing that energy injures both the organization and the people involved.

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* In *Outliers*, (Little, Brown & Co, 2011), Malcolm Gladwell used Microsoft's Bill Gates and the Beatles' musical success as examples that it takes roughly ten thousand hours of practice to achieve mastery in a field.

The practice is to notice when your attitude, mood, way of speaking, lack of listening, or failure to be responsible for the impact of your position or authority is having a suppressive effect on the energy expansion of individuals and the environment. In such cases, the practice is to acknowledge it, apologize, and make amends as best as you can.

4.7. Step Seven: Embrace the Merlin Factor—The Present-Future Singularity.*

The Merlin Factor is the ability to imagine the future, stand there, and plan backwards to the present moment. It asserts that the best predictor of the future in a person's life or a company's future is what they are doing now.[4]

"We propose that the Present and the Future are a Singularity. At any moment, there is only one thing going on—the "Present-Future".† The present moment is the point where the lines of past-present-future meet. The Present-Future Singularity is a point in space-time in which gravitational forces cause matter to have absolute density. Looked at from the outside, a present-future singularity is like a kaleidoscope. There are times when the future seems not influenced by the past and largely determined by new possibilities. The present moment then appears differently than if the future was determined by the past.

As Richard Bach wrote in his grand metaphor for mastering life and work, *Jonathan Livingston Seagull*, "Perfect speed is being there." If you want to change the future, change what you are doing, what you are paying attention to, right now, consistent with the future you want.

When having Conversations that Matter, be aware that the content, tone, attitude and background commitment in the present conversation are predictive of the future, and the future you imagine is predictive of what's happening now. Present and future are occurring at once.

4.8. Step Eight: Act from the belief that intelligence is largely collective.

> ***"Collective intelligence has existed at least as long as humans have, because families, armies, countries, and companies have all—at least sometimes—acted collectively in ways that seem intelligent."***
>
> **– M.I.T 2012 Conference on Collective Intelligence**

Homo sapiens (us) seem to have outlived Neanderthals because of our higher ability to cooperate in more complex circumstances, and be somewhat less rigid in our existing beliefs. Possibly our human beliefs were more like guidelines than Neanderthal strict principles and rules. Looking at today's personalities, politics, bureaucracy, and relationship dysfunction, I suspect but have not yet proven, that lingering and excessive Neanderthal DNA has now put us, in more complex circumstances, on our own road to non-collaborative extinction.‡

I recently asked a pharmaceutical company group where they thought the intelligence in the company was actually located. Without hesitation everyone said at once that the

* Charles E Smith, Kairos Productions, 1995.

† Marc Cooper & Charles E. Smith, "Future-Present Singularity," Library of Professional Coaching November 26, 2014 Issue of Transformation Magazine: A Road Map.

‡ See Charles E. Smith, "Collective Intelligence", *Library of Professional Coaching* April 17, 2013 Issue of *Transformation Magazine: A Road Map*.

intelligence was collective and everywhere. Then I asked how the company operated with respect to where it was assumed that intelligence was located, and the answer came back just as quickly, that Intelligence was assumed to be in the hierarchy and that legitimate thinking, strategy, and practice flowed from there.

When asked why they didn't push back, the consistent response was "fear." Consider that Economic Fascism is a system of governance, whether political, bureaucratic, or corporate, in which authorities suppress opposition and criticism, and regiment economic infrastructures and resources.

In a Conversation that Matters, a turning point is to act as if intelligence is in fact collective and is distributed broadly or normally within a given system, independent of people's power and position.

4.9. Step Nine: Bring the overview effect down to earth.

> ***The Overview Effect creates the experience of transcendence and the possibility of a world that works for everybody.***

Upon breaking free of Earth's gravity and going to space, some astronauts experienced a surprising change in their perspective of life on Earth. Author Frank White named this phenomenon *The Overview Effect*.* In the same way that astronauts must achieve escape velocity to reach space and see the Earth anew, so is it possible for many on Earth to generate an equivalent escape velocity to break free of the gravity of the cultures and circumstances that keep us from going for our dreams with courage and conviction. I am taken with the transformative, emotional impact of the Overview Effect because the experience is a riveting contrast to the fragmented experience of the world so many of us have.†

Having Conversations that Matter is a practice that comes from your personal choice to be 100% responsible—cause in the matter of bringing the experience of *The Overview Effect* to your work, relationships and systems that engage with one another. This is listening without boundaries and recognizing the strange and magnetic force that listening is. The "integrative insight" is that beyond visible structure, the whole that is greater than the sum of the parts is your creation. This is the possibility of business, government and societies succeeding at operating in harmony with the way people actually are.

4.10. Step Ten: Practice having everything wonderful be a surprise.

I have spent a good part of my life making lists, setting goals, making plans and calling people up. Mostly, it is been a waste of time. Some years ago, I sold my consulting company and in leaving, went through years of records, lists, plans, goals and phone calls. Nothing had come of almost all of them. Still, we had thrived, survived, and gone about our business more or less successfully. I began to wonder what was really going on.

If most of my planning had made no difference, what did? Was good fortune a matter of leaving the window open, and spreading a few crumbs so that blue birds might fly in? Was

* The Overview Effect: Space Exploration and Human Evolution, Second Edition, January 1998.

† Harvard University Video for astronauts discussing *The Overview Effect*: http://www.youtube.com/watch?v=0X_fhLIPydE

most of the world's strategy and planning really bunk—no more than a way of suppressing anxiety about the future? Without my lists I felt shaky…, maybe that's all they were good for. Maybe a key to often having Conversations that Matter is to consider that Everything Wonderful is a Surprise!

'Wonderful' happens in the moment. Miracles happened consistently in life and work, when people "let life flow through" them.[5]

"The greatest sin of all is to turn something concrete into something abstract." – Jean Paul Sartre

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4.11. Step Eleven: Notice which conversations are missing right now.

We each have our favorite types of conversations, while there are other types which we avoid or engage with insufficiently. These 'missing' conversations are invisible to us and are sometimes they are the ones most needed to have something actually happen.

Dr. Thomas Zweifel illustrates the essence of necessary conversations that are often missing, not obvious, in his Global Leadership Pyramid.* Organized into five levels, this is a framework that brings particular energies into focus. Each of these conversations produces a specific effect, and in their entirety bring necessary coherence, action and desired outcomes to a situation. The absence of any of these conversations ultimately creates a deep hole in effectiveness and satisfaction.

Mastery of Conversations that Matter requires remaining aware of which categories of conversation dominate and which are missing, and to be personally responsible for all of them.

5. A Stand Sparks Conversations That Matter

Recently, I served as Executive Coach to a national division of a global organization. In our first meeting, the President said she needed a great leap forward in her own leadership, and in having the organization operate far beyond business as usual. She had recently been transferred from a country where her performance was rated as ordinary. She now intended to create a place that excelled in growth, profit, and performance while at the same time had people genuinely wanting to come to work because the culture was caring, humane and collaborative. She wanted people to breathe 'trust' in the air.

Over the next two years, they came to have the third highest engagement scores in the global organization. Growth was consistent and peoples' energy, good humor and passion for working together increased in pleasing ways. More and more people from outside the division independently asked to go to work there because of what they had heard. Business was good, products were popular, extensive coaching, training and imaginative leadership made a visible difference. But none of this can explain the surprising integration of organization needs and human character that occurred.

* See https://www.linkedin.com/in/thomasdzweifel

What really seemed to spark all of this was a belief in what Shlomo Yishai calls a "Human Mutuality System":

> ***"The meaning of Human Mutuality is that the person lives in a Superimposed Reality in which each person is at one and the same time both an individual and part of a collective. It is a durable, existential infrastructure that allows humanity to create diverse solutions that provide a significant, stable and empowered existence."****

This leader's deep-seated belief in the possibility of Human Mutuality is what ignited, inspired and drove this success and her efforts to generate a business and economic system based on that belief. From this belief she was willing to "stand" for it as inevitable challenges and conflicts took place. To stand for something means to hold firmly to a particular opinion or belief…, to give it your wholehearted support.

A stand is the engine that takes a good idea and makes it real. Consider that in this life for the most part, you get what you stand for. We propose that an individual's "stand" creates widespread permission for Conversations that Matter.

Afterword

Jean Paul Sartre said that, "The greatest sin of all is to turn something concrete into something abstract." In 47 years of looking for simpler ways to make things better in companies and personal lives, the bridge between human mutuality and extraordinary performance has been in helping people be connected and contributing to one another.

It's as simple as that.

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* See "Human Mutuality", *Library of Professional Coaching*, Dec 3, 2016 Issue of *Transformation Magazine: A Road Map*.

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Human Mutuality System

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Abstract

This article describes the challenge posed by the 'Human Global Era' we live in. Humanity lives in a new reality. We live in a real world and a virtual world at the same time. Living in a dual manner is a game changer. It requires a definition of a new set of perceptions and rules. The article presents the new human essence and the basis for new set of perceptions and rules. The article deals with this challenge and presents the 'Human Mutuality System' as the framework that will enable sustainability and human prosperity in the new reality.

1. A Historic Moment – Tested by Time

"That's one small step for man, one giant leap for mankind". Neil Armstrong's immortal line has become embedded in human consciousness as a high-point in human history. Actually, it is a double achievement—a peak of technological science generated by the United States through the NASA space agency, and at the same time, a political and security summit. Planting the American flag on the moon was a significant victory in one of the major battlefields of the Cold War. The Space Race opened in 1957 with Russia in the lead after launching the first Russian Sputnik into space. In 1961 the Russians widened the gap still further by launching Vostok, the first manned space capsule. The rest of the race is well known, with America closing the gap and taking over the lead. The Apollo 11 team reached the finish line and planted the American flag on the moon on July 20, 1969. It can be claimed that this double achievement forcefully tipped the balance of power that brought about the collapse of the USSR in 1991. The Moon Conquest can be regarded as the high point in the development of human ability and therefore the defining moment of the 20th century. Yet the test of time allows us to pinpoint another pivotal moment with far-reaching consequences.*

That moment came about accidentally during Apollo 8's mission in 1968—the moment when the astronauts witnessed Earthrise. The influence of this moment has extended far into the 21st century and its significance will accompany humanity as we face present and future challenges. The famous picture of Earthrise taken by the astronauts during those magical moments generated a new human consciousness.† The recording of the astronauts' conversation within the space craft—published by NASA—is testament to their amazement and awe at their first view of Earthrise. They initially photographed the phenomenon in black-and-white, and on the recording they can be heard searching for color film in order to capture the amazing sight before their eyes. They had no idea they were taking part in a historic moment and that this picture would generate a change in human consciousness.

* Further reading http://www.nationalcoldwarexhibition.org/schools-colleges/national-curriculum/space-race/ http://www.history.com/topics/space-race

† http://www.nasa.gov/vision/earth/features/bm_gallery_4.html

2. Earthrise

The human consciousness created by the Overview Effect experienced by the astronauts as they beheld earth from space was transformed into human awareness through the Earthrise and ensuing pictures. The long-term effect of this consciousness engendered the human awareness that Earth has one climatic system.

Expanding the human consciousness soon made it possible to observe the critical human challenge generated by the Industrial Revolution—Global Warming. This challenge was answered by the creation of global movements awakening the need to deal with this threatening reality. These movements pressured governments to act and take responsibility for managing the Global Ecological System. One focus of activity was to generate international public pressure on the industrialized countries, urging them to reduce the gas emissions creating the Greenhouse Effect and encouraging the use of alternate energy sources.

Martin Winterkorn, former CEO of the Volkswagen Group, was until recently a prominent leader in the world vehicle industry.* He resigned in September 2015 following the discovery that for the previous six years Volkswagen had installed a program in the computers of all VW diesel engine cars marketed in the United States. This program identified pollution tests and artificially reduced the emission of pollutions in order to meet standard requirements. His resignation demonstrates the long-term effect of Apollo 8's 'consciousness generating' space mission picture, the Earthrise. It is still too early to estimate the effect his resignation will have on German economy, one of the leading economies in the EU. This example demonstrates the ripples of effect created by the consciousness change that came about through Apollo 8's flight.

Let us use the Test of Time to evaluate the high point of the Apollo program. It seems that the change in human consciousness that followed Apollo 8's flight challenges the high point of human ability as represented by the Apollo 11 Moonwalk. At the time, human focus was undoubtedly on Apollo 11—one out of every six people on the planet watched man's landing on the moon. Yet under the radar, history had planted another pivotal moment in the American space program that was destined to generate an essential change in human consciousness. The effect of this change follows us deep into the 21st century.

Still, to my mind this is not the most significant surprise hiding under history's surface in the 1960s. The most powerful change destined to shake the pillars of our existence was buried deep under the surface of history, concealed in the guise of banality. It would change human abilities and human essence, raise questions about human destiny, and in effect usher in a new human era.

3. The New Life – Living in Interconnected Networks

The internet is one more product of the Cold War.† Spurred by fear of nuclear attack, towards the end of the 1960s the US Defense Department developed a communications network whose durability was guaranteed because it was independent of communication centers.

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* http://www.theguardian.com/business/live/2015/sep/23/markets-chinese-economy-fears-vw-crisis-live-updates
http://money.cnn.com/2015/09/23/news/companies/volkswagen-emissions-crisis/

† http://www.history.com/topics/inventions/invention-of-the-internet

The internet developed during the 1980s. It became a sophisticated communication network, creating a reality of virtual networks, a reality parallel to the real world humanity had inhabited exclusively until then. Towards the end of the 20th century humanity began living in superposition—living simultaneously in both the real world and the virtual world of the network. This virtual network reality has generated a new era of humanity—Humanity's Global Era. This new era challenges us on all levels while simultaneously pushing us to conquer our next summit.*

"Humanity has created a reality for which our traditional systems and the social structures that have so far accompanied our history are unsuited."

In my opinion, history shows that humanity's high point of 'creating a world' parallel to the real world inhabited by humanity throughout its existence is the pinnacle of human achievements in the 20th century. From its heights we are discovering that this summit may be too high for us. Conquering the virtual summit has brought humanity to a tipping point. Humanity has created a reality for which our traditional systems and the social structures that have so far accompanied our history are unsuited. We are at a watershed: on the one hand we are being called upon to generate humanity's next reality, yet at the same time we can observe the cracks in our social and political state that may lead us to governmental, societal and personal chaos. This reality can be likened to vertigo—the dizziness and lack of orientation that may attack a pilot flying at high speed at a great height. The force and speed of change generated by the reality of the internet may culminate in a state of 'social vertigo', and possibly plunge us downwards, hurtling towards a crash.

4. Where do we go from here? What direction is everything heading?

At this stage of the discussion, the magnitude of the summit we experienced through Apollo 8 is revealed—Earthrise. The climatic confrontation can be seen as a 'human drill' on a global scale before the advent of the new era, the Era of the Global Person. The stages of handling the climatic challenge can serve us as a model for dealing correctly with the new virtual reality. Humanity has in fact practiced 'how to deal with a new human consciousness and how to turn this consciousness into active awareness'. An awareness that generates a new goal—managing a Global Ecological System.

Based on this model we can define the three vital stages of confrontation that will allow us to turn humanity's challenge of a virtual network reality into a global human force.

The coping model:

A. **Consciousness and Awareness of the New Reality** – the Overview Effect of the virtual network reality;

B. **The Human Challenge** – Humanity's Global Warning;

C. **The Solution** – creating a Human Mutuality System.

* Further reading Yishai Shlomo 2015 *Humanity's Global Era—A Dual Paradigm Change*, Publishing house Humanity's Global Era Research Center

Below is a brief demonstration of each of the coping stages.

"A reality in which leadership powers are granted to everyone necessitates a new concept of social leadership—network leadership."

4.1. The Overview Effect of the Virtual Network Reality

The following principles are manifested when we take a broad perspective of the reality of life in the virtual network world:

- Human superposition*—humanity is currently living simultaneously in both a real and a virtual world.

This is a double reality of life that exposes us to new horizons while at the same time challenges the existing order on every level of our existence. Humanity is challenged on the existential level—financial and physical; on the human level—personal and social; and on the ideological level—ethical and judicial.

- In Humanity's Global Era the empowering of human networks creates an unprecedented number of phenomena.

The reality of the global network—the information internet and additional internet configurations such as the Internet of Things and the Energy Internet—has transformed the world into a uniform network reality. Expanding our horizon to a 'global horizon' through the information internet, complemented by social networks, generates a network reality.

Network consciousness means comprehending the power, responsibility and obligations interwoven in the reality of the virtual network.

- In the cyber world the Global Person accumulates power that until now had only been accessible to states and leaders and uses this power to influence the real world.

Access to professional and security information, global financial capability, and the ability to appeal to the masses through social networks are now in everyone's hands. These leadership abilities, which throughout history have lain in the hands of country leaders, are now available to everyone.

A reality in which leadership powers are granted to everyone necessitates a new concept of social leadership—network leadership.

The Global Person lives in a network reality that combines his being at one and the same time a significant and powerful individual and part of the human collective.

Another superposition is that at the beginning of the 20th century humanity's focus was on the collective and by the end of that century that focus had shifted to the individual. The

* Further reading Yishai Shlomo 2015 *Humanity's Global Era – A Dual Paradigm Change*, Publishing house Humanity's Global Era Research Center, P.124-131

21st century began with a reality that integrated the individual and the collective as a uniform, complementary essence. Never before has humanity been so connected and so dependent on itself and at the same time never before has each individual been as powerful and significant as they are now.

This is a new reality of mutuality between the individual and the collective—a reality of Individual Collectivism complemented by Collective Individualism.

We can summarize and say that the Global Person is connected to and dependent on the virtual network reality—he is interdependent and interconnected.

The virtual network reality generates a reality in which every person is empowered through the virtual network reality as never before, yet at the same time his existence is dependent on this reality as never before. **This is an organic, global reality**.

4.2. The Challenge – Humanity's Global Warning

The awareness of this virtual network reality engenders dual sentiments. On the one hand, the new human power stemming from this reality opens new vistas and fosters new hopes. The new horizon enables every person to be present in the new reality to an unprecedented degree. At the same time this awareness gives rise to fear. The fear is existential. It stems from the incompatibility of the life systems previously created by humanity—financial, social and governmental—with the new reality. This widening chasm raises questions regarding our physical and moral presence with greater intensity. This is *Man's Search for Existence and Man's Search for Meaning.*

An overview of the challenges created by this reality gives rise to the understanding that despite the technological advances that have generated a new force of humanity, the prevalent personal sensation at the beginning of the 21st century is of instability:

- Social networks have created a new public sphere that has no code of ethical behavior. This sphere raises moral questions and requires creating new social norms (shaming, cyber bullying).
- Extreme phenomena—the network reality has facilitated the creation of a positive shared human consciousness and practice to an unprecedented degree. At the same time it also enables more powerful and more extreme negative human behaviors that push us closer to the abyss.
- Social networks expose what goes on 'behind the scenes' of government and so deepen civilian mistrust of public representatives.
- Extremist terrorism is weaving a global net under our feet.
- The economic gaps, cost of living and unclear employment horizon create existential anxiety that increases with the awareness of smart machines that will replace workers in many fields. This reality caused the social protests that erupted around the world in 2011 to continue festering in the social networks, fed by growing frustration. This has given rise to public sentiment that the governmental system is detached and alienated from peoples' existential distress.

- The global horizon created by the virtual network reality allows refugees from third world countries to discover and flood Western countries. This challenge requires a new way of thinking.
- The education systems are run according to principles suited to the Industrial Revolution but are not suited to the reality of a world flooded with information. Education systems lack the educational code to prepare students for the challenges of the future—life in a powerful reality of dynamic virtual networks.
- Fear of an unknown future that will include 'smart machines' that will 'take control of human life'.

"How do we transform the technological power we all enjoy into a significant, viable and thriving human reality?"

These challenges and many others testify that we are being called upon to redesign the reality of our lives.

In actuality we are experiencing a reality in which human and financial capital is mostly invested in creating the technology for generating a cyberworld parallel to the real one. In contrast to this technological success, not enough investment is being made in researching, visualizing and developing human adaptation to this new reality. This gap is the reason we are challenged, both as a society and as individuals, on all levels of human existence: our physical existence, our humanity and our values.

Humanity is at a turning point that challenges all structures of our life. The bloody revolutions throughout history were generated in a reality in which the structures were incompatible with humanity's needs. Reviewing these challenges gives rise to the apprehension that the chaotic situation we are in and the powers generated by this new network reality are leading us to anarchy and violence.

In contrast to this grim forecast there is a possibility—and therefore a responsibility—of turning the Era of Global Humanity into humanity's next stage of development.

The challenge that arises from this limited overview is: How do we transform the technological power we all enjoy into a significant, viable and thriving human reality?

5. Creating a Human Mutuality System

Understanding the scope of the change to the reality of our lives as expressed in The Overview Effect and in Humanity's Global Warning enables us to understand that we are in the midst of a tectonic change in our lives (the tectonic plates are Earth's internal plates underlying the oceans and continents). We must understand that the change in human abilities—leadership powers accessible to all—and the essence of networking have generated a new reality. This reality undermines the traditional order of existence. It demands a redefinition of the basis for human existence, the basis on which humanity constructs the reality of our lives.

Based on this understanding, the purpose of presenting the Human Mutuality System approach is not to provide solutions for specific challenges but to create an infrastructure

that will enable us to generate a solution. We must create a new, durable, existential infrastructure that will allow humanity to create diverse solutions that will provide us all with a significant, stable and empowered existence.

"Each person is at one and the same time both an individual and part of a collective."

The Human Mutuality System approach integrates an in-depth understanding that the new infrastructure in which we live in this virtual network reality involves the Global Person. The Global Person is empowered to the level of global leader by the leadership abilities offered by the internet web, while at the same time each individual's actions are based on the understanding that he is part of a human whole—the network reality.

The meaning of human mutuality is that the Global Person lives in a Superimposed Reality. Each person is at one and the same time both an individual and part of a collective. Therefore any place in which people are active must include responsibility for the Human Superimposition.

Collective Individualism—a reality in which the Global Person realizes his powerful individual essence while understanding that he is simultaneously part of a collective and committed to it. To complement this, **Individual Collectivism** is a reality in which the Global Person acts as a collective while acknowledging the importance of each individual and attending to each person's needs.

In order to reach this integrative reality we must develop both sides of the equation—both the individual and the collective.

5.1. The Individual

The **self-empowerment of each individual** is the empowerment of—

- **Inspiration** – the basis of human will.

  Self-inspiration is the expression of a person's overall will. A will combining the person's strengths, abilities and feelings into a force acting to express his personality, values and beliefs.

- **Wisdom** – the basis for understanding our own abilities and capabilities based on existing knowledge. Acknowledgement that allows practical translation into self-inspiration.

- **Commitment** – to carry out self-inspiration and act upon it in reality.

5.2. The Collective

Creating a network collective based on network leadership. Leadership that is not based on a leadership of 'one wise, knowledgeable person', but a leader capable of generating leadership. Realizing the partners' self-leadership and using it to create collective inspiration and the wisdom of the crowd.

5.2.1. Generating Leadership

An integrating leader

- **Meaning** – action based on meaning allowing us to harness others to a shared path.
- **Sense of worthiness** – **Recognition and Appreciation** – only leadership that is capable of appreciating the value and contribution of each individual and connecting with them while esteeming their contribution, can generate the 'collective inspiration' and 'wisdom of the crowds' necessary for coping with the new and complex reality we live in.
- **Trust** – the basis for cooperation between empowered people. Mutual trust, trust in the honesty of intention and mutual acknowledgement and appreciation.

6. Epilogue

It is important to note that this condensed article is intended as a general outline of the new consciousness and the possibility of transforming technological power into an empowering human reality. Each stage in this outline requires further explanation and in-depth research in order to generate a practical solution.*

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*For further discussion see the book *Humanity's Global Era – A Dual Paradigm Change* and other publications by the Humanity's Global R&D Center.

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Book Review

by **Michael Marien** (Fellow, WAAS) and
Michael Sales (Security and Sustainable Guide)

The Collective Leadership Paradigm Shift

The Art of Leading Collectively: Co-Creating a Sustainable, Socially Just Future.
Petra Kuenkel (Founder/Director, Collective Leadership Institute, Potsdam, Germany).
Foreword by **Ernst Ulrich von Weizsaecker** (co-president, Club of Rome).
White River Junction VT: Chelsea Green Publishing, Jan 2016, 290p, $29.95.
(www.theartofleadingcollectively.net)

Anyone reading this book review is very likely to advocate "sustainability," probably using the broad UN definition of 17 Sustainable Development Goals, and to be a member of one or more organizations advocating sustainability, peace, and/or robust response to climate change.

In his uplifting Foreword, WAAS Fellow Ernst Ulrich von Weizsaecker starts off by summarizing the UN Secretary-General's High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, as regards "the central importance of a new spirit to guide a global partnership for a people-centered and planet-sensitive agenda, based on the principle of our common humanity." (p.ix) The Panel urges five transformative shifts toward universal human rights and basic economic opportunities, sustainable development at the core of all development activities, transforming economies to provide jobs and inclusive growth, peace and good governance as core to human well-being, and forging a new global partnership. Together, these goals can be seen as "security and sustainability," both broadly defined, based on the recognition that we cannot have one without the other.

"The traditional leadership paradigm refers only to individuals and expansion of individual skills. But most challenges of sustainability require building the capacity of groups and systems to move issues of common concern forward."

Von Weizsaecker goes on to advocate reduced ecological footprints for rich nations, an increased Human Development Index for poor nations, stretching our thinking, pushing ourselves out of our comfort zone, evolution of our collective human consciousness as a complex and ever-shifting matrix, willingness to venture into the unknown, commitment to continuous learning, and "a more conscious process of sustained transformation." But meeting the challenges of sustainability requires both an individual and a collective side.

"We need bold future thinkers who push us beyond the limits of our habitual thought, and we need better skills in collectively negotiating our path into the future." (p.xi)

This book is about the underappreciated "collective side," by a Club of Rome member who has spent decades in promoting collective leadership. Petra Kuenkel argues that a necessary paradigm shift is gradually underway. The traditional leadership paradigm refers only to individuals and expansion of individual skills. But most challenges of sustainability require building the capacity of groups and systems to move issues of common concern forward. "We cannot travel the path toward sustainability in silos; instead we need to harness collective intelligence and let it complement individual expertise." (p.34) Leading for sustainability requires leadership by many individuals toward a similar goal on a collective scale—what David Harries calls "leadingship."

1. Collective Leadership & the "Security & Sustainability Guide" Project

Before going further into the details of Kuenkel's book, it is useful to cite one of her concluding comments that "Certainly we need to look more deeply into the quantity and quality of our multi-actor collaboration efforts." (p.262)

For the past three years, we (Marien, Sales, and WAAS Fellow David Harries) have been looking into the *quantity* of multi-actor collaboration efforts related to security and/or sustainability as a WAAS project. The sheer quantity is remarkable: as of June 2016, we have identified more than 1,500 international organizations, or organizations of international interest, half of them formed since 2002. They include 70 groups concerned with climate change (the best-known being the Intergovernmental Panel on Climate Change), 72 groups focusing on the energy transition, 45 groups concerned with oceans, 31 with looming freshwater deficits, 30 with food security, 32 with cities, 28 urging economics rethinking, 44 promoting sustainable business, 50 groups working for peace (overlapping with 24 groups focused on nuclear disarmament), 77 "green" foundations that fund many of these groups, and 33 UN agencies and programs with authoritative information and ideas. On the surface, it appears that "silo mentality competition" still prevails in these grand gaggles of groups, seen by Kuenkel as "enormous efforts conducted in parallel," often isolated and uncoordinated. (p.113)

On the other hand, many of these organizations are members of alliances, coalitions, consortia, and networks. We have identified 68 so far, such as the Alliance for Peacebuilding, Alliance for Sustainability and Prosperity, C40 Cities Climate Leadership Group for megacities, Coalition Climate 21, Consortium for Ocean Leadership (102 groups), Corporate Responsibility Coalition, End Water Poverty (a 270-member coalition), Financial Transparency Coalition, Global Call of Climate Action (network of 450 non-profits), Global Partnership for Oceans (140 groups), Green Economy Coalition, Natural Capital Coalition, New Economy Coalition, Science and Technology Alliance for Global Sustainability (and its flagship "Future Earth" project), Sustainable Endowments Coalition, Sustainable World Coalition, the UN Sustainable Development Solutions Network, Urban Sustainability Directors Network, the World Green Building Council, and the WAAS-sponsored World University Consortium.

As to the *quality* of these efforts, it seems that considerable headway is being made. As Kuenkel notes, "Sustainability is on the agenda of every nation, every organization, and many

citizens today; it is a global movement that cannot be ignored." (p.4) But progress on many fronts—climate change, economic security, nuclear weapons, etc.—is mixed at best. And this movement is ignored or greatly underappreciated by many, as illustrated by the minimal attention in major media. Sustainability may be said to have truly arrived, for example, when *The Economist* and *Bloomberg Businessweek* include a sustainability section in their extensive annual Year Ahead outlooks, and *The New York Times* develops a weekly sustainability section in addition to its weekly or daily sections on Style, Food, Science, Arts, Sports, and Business, and when it reviews seminal books such as **The Age of Sustainable Development.** Indeed, many of these alliances and coalitions may merely be an assembly of endorsing organization logos; a first step, to be sure, but hardly a learning organization that harnesses collective intelligence in a systematic way.

"Every change endeavor starts with people seeing future possibilities."

Regardless of the quality and effectiveness of these efforts, *the more important question is how these single organizations and multi-organization alliances can become even more effective.* The potential for doing so is vast, and Kuenkel shows how it can be done.

2. Kuenkel's Contributions

Petra Kuenkel promises that her book "will help you navigate the collaborative journey." Conflicts, misunderstandings, failures, and hidden agendas are part of the journey, she warns, and sustainability is not one single issue, but a complex of issues. But "collective leadership for sustainability can be learned and enhanced…helping leaders to implement "more outcome-oriented and constructive co-creation." (p.6)

Chapters discuss four types of complexity, sustainability as a global project to realign deep human values with human behavior, the paradigm shift from the individual to the collective, the costs of non-collaboration, making invisible structures that hold us prisoner visible, expansion of female leaders in top positions as essential to co-creation, co-created trust as the cornerstone for collective leadership, getting tangible results from collective action (co-design of initiatives, focusing on most easily attained successes, joint evaluation of results), empowering action groups by building communities of change-makers and change-promoters (by fostering trust-based co-creation), keeping the larger vision visible, a culture of iterative learning, using opportunities for cross-sector connections, scaling up collaboration (through stakeholder dialogue, cross-sector partnering, encouraging leaders to step into the unknown), and scaling up collaborative impact (take collaboration seriously, shift focus from events to collaborative change processes, design integral approaches, discover the passion for change).

A key element of Kuenkel's book is her six-dimension "Collective Leadership Compass" involving 1) Future Possibilities: every change endeavor starts with people seeing future possibilities; a vision statement is important; 2) Engaging Stakeholders: which is more than simply enlisting followers, and may require changes in vision and strategy; 3) A Culture for Innovation: within us, in our teams, in our organizations, and across institutions; 4) Humanity: developing our own humanity and caring for needs of the planet mutually reinforce each other; 5) Collective Intelligence: develop competency by encouraging difference and suspending judgment about it; exposure to different constructions of reality is paramount;

and 6) Wholeness: seeing things in larger context. This "Compass" is used throughout the book to illuminate various chapters.

Comment

The Collective Leadership Compass may seem overused for some readers, distracting from the central message that collective leadership is desirable and feasible. And some may already feel that they are engaged in collective leadership, raising the question as to whether there are sensible limits to this pursuit. The message in this book is that there are infinite possibilities and needs for improvement, and this may well be true.

The book begins by briefly describing a case study of developing a common code for sustainable coffee production, where various stakeholders were brought together by Kuenkel. Six additional case studies are provided, mostly involving public-private collaboration. In contrast, our Security & Sustainability Guide suggests the need for greater collaboration among NGOs, academic groups, and UN agencies that are ostensibly competitive and/or disconnected, although no one ever mentions this (e.g. 45 groups concerned with the plight of the oceans, including at least three consortia, and 28 groups involved in necessary rethinking of economics for the 21st century). Perhaps most of these groups are ripe to be brought together, but collaboration among similar groups with overlapping non-economic interests may be more difficult than assembling industry stakeholders who can readily see the economic benefits of cooperation. And bridging the distance and lack of awareness between security and sustainability sectors may well be the most difficult, but critical, challenge of all. There are at least several dozen groups that do encompass both mega-sectors, however, and it is worth trying for greater bridging here, and elsewhere.

3. Further Reading

- David Peter Stroh, **Systems Thinking for Social Change.** White River Junction VT: Chelsea Green Publishing, 2015. Especially see the "Four-Stage Change Process" involving building a foundation for change (including collaborative capacity), building understanding through systems mapping, building support through catalytic coalitions, and making a choice between the status quo and change; also has chapters on systems thinking for strategic planning and for evaluation.
- Steve Waddell, **Global Action Networks: Creating Our Future Together.** New York: Palgrave Macmillan, 2011, 244p.
- Jeffrey D. Sachs, **The Age of Sustainable Development.** Foreword by Ban Ki-Moon. New York: Columbia University Press, March 2015, 543p. Arguably the best overview of sustainability. Includes chapters on climate change, planetary boundaries, biodiversity, ending extreme poverty, social inclusion, education for all, health for all, food security, and sustainable development goals, which Sachs helped to formulate. Also available as a MOOC from the UN Sustainable Development Solutions Network.

– Michael Sales and Anika Savage, **Life-Sustaining Organizations – A Design Guide**. Newburyport MA: Create Space, 2011, 226p. Presents a collective leadership development methodology that combines scenario planning and systems thinking to "interrogate the future" in order to arrive at present day strategy.

– Chris Argyris and Donald Schön, **Organizational Learning: A Theory of Action Perspective.** Reading, MA: Addison-Wesley, 1978, 356p. A seminal work from nearly 40 years ago, describing the relationship between interpersonal competence, collective leadership, and organizational learning.

– Peter Senge *et al*., **The Necessary Revolution: Working Together to Create a Sustainable World.** New York: Doubleday, 2008; Broadway Books edition, 2010, 406p. Chapters on the business rationale for sustainability, positioning for the future, the imperative to collaborate across boundaries, building shared commitment, and new strategic possibilities. Petra Kuenkel cites MIT's Senge several times in her book.

– Dimitar Tchurovsky, "COLLABOCRACY: Collaborative Intelligence and Governance of Globalised Society, *Eruditio* 2:1, Jan 2016 (available online at World Academy of Art and Science website). On collaborative intelligence as "the most powerful human intelligence," and transition from a democracy to a collabocracy of problem-solving networks.

– Michael Marien, "Sustainability Past and Future: Ten Propositions on the Emerging Organizational Macro-System," *Eruditio* 2:1, Jan 2016 (online at WAAS website). On the history of sustainability thinking, barriers to the movement (it has a long way to go), major divisions among groups, security as both barrier and driver, infoglut as a major barrier driving fragmentation, and the need for a new paradigm for integrating the many integrative thinkers.

– Michael Marien, David Harries, and Michael Sales, **The Security & Sustainability Guide: 1,500+ Organizations Pursuing Essential Global Goals.** Forewords by Heitor Gurgulino de Souza and Garry Jacobs. A project of the World Academy of Art and Science. Interim Draft PDF, July 2016, c.270p. A provisional listing of over 1,500 briefly described organizations, with further descriptions for nearly 400 of them, an extensive subject index, and an overview of 125 information portals. To be distributed for comment to WAAS Fellows.

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